Gensoku No Genkei
(原則 の 原型)

A journey into the simplicity of movement

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PROF. ATTILIO SACRIPANTI
VII Dan – IJF Academy
EDucating Judo Coaches for Older Practitioners
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This Book is dedicated to three travel Companions of my Life:
Alfonso Borelli born in Naples on ***28*** *January 1608 ,*
Jigoro Kano born in Mikage (Japan) on ***28*** *October 1860 ,*
and Nicola Tempesta 9 Dan born in Naples on ***28*** *June 1935.*

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And finally in the true spirit of Jita Kyo Ei to Edward Shirey who spontaneously offered to revise the English form.

A. Sacripanti

Gensoku No Genkei (原則 の 原型)
"The Archetype of the Principle" of the use of forces.

Summary

This is the story of a journey in search of the archetype of the simplicity both of movement and use of forces that ended with ten idealized actions, that answer the two questions. Can you please help me fall down? What is the best use of force? Seen in the light of the two maxims of Judo:
Ji ta kyo ei (自他共榮) and Seirioku Zen 'yo (精力善用)

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Gensoku No Genkei (原則 の 原型)

"The Archetype of the Principle" of the use of forces.

Prologue for Westerners.

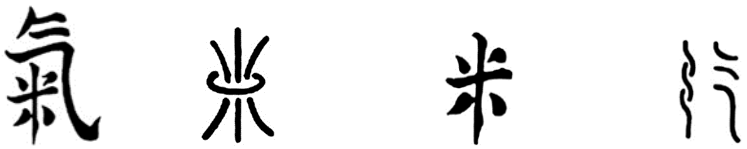
This prologue has the stated purpose of wanting to show Western readers, who know little or nothing, how complex and different the traditional Japanese way of thinking is from the Western one.

We could use a biomechanical comparison to argue that we Westerners reason in a similar way to a linear approximation, while the traditional Japanese reasons in a non-linear, perhaps quadratic if not more complex-way. Japanese people is closed in a series of behaviors, some immutable, which regulate every detail of both personal and relational life. An interesting hint of this complexity, often infused also in traditional Kanji, is provided by this short prologue written by Sensei Bruno Carmeni 9 Dan who kindly allowed its publication.

With the kind authorization of Bruno Carmeni Sensei 9 Dan.

UNITY OF MIND AND BODY

Ki 気 is a compound character that combines kanji meaning "grain of rice" with other strokes above it that represent the steam that rises from the rice as it cooks.



Ancient writing A bundle of rice The grain of rice The water vapor

Ki 気 is therefore represented pictographically as a plastic energy, invisible except for its effects. We do not perceive the steam rising from the pot, but we can hear and see it when the lid is shaken.

In Chinese the esoteric force is called chi (ci), in Japanese ki 気. Like many things of oriental origin, ki 気 has acquired an aura of exoticism. Budō 武 道 martial arts practitioners are amazed when they realize that the word ki 気 is used in rather ordinary terms. In a dōjō 道場 words such as ki 気 or musubi 結 び "the act of unifying one's ki 気" are used in a colloquial tone. But the word ki 気 also occurs when we talk about the time ten-ki 天 気, ki-chigai madness 気 違 い or even the carburetor of a car kuruma no ki-kaki 車の気化. Even more surprising can be expressions such as "we don't get along", ki-ga awanakatta 気 が あ わ な か っ た, ki-mochi ga warui 気 持 ち が わ る い.

What is the use of a complex and technically elaborate method of combat if there is not also an inner platform, of mind control, from which to act or react according to the circumstances?

The best known teachers: sensei 先生 in fact taught that no method had any real value if it did not help develop the character of a man in such a way as to make him the master of his weapon and therefore really powerful in using it. These mentors continually sought new ways to instill in their disciples a particular, always calm and balanced, mindset that would an enhanced clarity of perception which they regarded as the only true basis for appropriate decisions. Therefore, other ways and disciplines were sought that emphasized the training of the mind, in an attempt to guarantee that necessary control of the inner self which was the fundamental requirement for control over the opponent and the external circumstances of the shiai 試 合 combat. Eventually two of these concepts became milestones for the higher development of

all oriental arts, the concepts of hara center 腹 and ki energy 気; both contained in one or the other form in all major Eastern systems of thought.

The concept of iki い き

We face this discipline that no longer presents itself as an external form, but typical of Japanese aesthetic thought. The original Greek word from which “aesthetics” derives means “perception through the senses”. In particular through tactile sensations.

Iki い き, often written with the ideogram 粋, is a traditional aesthetic ideal.

It is thought that the basis of iki い き is a traditional aesthetic ideal that was formed in the urban merchant class chōnin 町 人 in the Edo 江 戸 時代 era (1603-1868).

iki い き is an expression of simplicity, spontaneity and originality.

Iki い き is not very refined, pretentious or complicated; it can mean a personal trait or artificial phenomena that show human will or consciousness, it is not used to describe natural phenomena, but it can be expressed in the human appreciation of natural beauty, or in the nature of human beings.

The term iki い き is generally used in Japanese culture to describe the aesthetically appealing qualities that, when applied to a person, make a great compliment.

Iki い き is not found in nature, although it is similar to wabi sabi 侘 寂, sometimes described as "imperfect, incomplete beauty" derives from the Buddhist doctrine of anitya in Japanese mujō 無常, impermanence. As it ignores perfection, this is a generic term that includes various characteristics related to refinement and taste, for example, the manifestation of good taste in sensuality can be defined as iki い き. This is an expression of simplicity, refinement, spontaneity and originality; it is ephemeral, direct, measured and unconscious, it is not excessively refined, pretentious, complicated.

The people In Japanese words, (nihonjin 日本人）clearly know the ideograms , a part of their culture, and how to communicate in writing using ideograms, they are obliged to use them, while in the Western world there are few who know how to read some of them. A self-respecting teacher must at least know some kanji 漢字 inherent to his practice, both for his own culture and for clarification of some philosophical and technical concepts.

In the Japanese language there are various ways of pronouncing the number "five", including "go" 五, in the case of Jūdō 柔道 there are different kata 形 with this term, but with different meanings. In relation to the "five principles" itsutsu no kata 五 の 形 is written with the number "five" (itsutsu い つ つ is a way of saying five 五) . In the demonstration of the "counterattacks" gonosen no kata 後 先 の 形 does not refer to number "five", but to "postpone" 後, in this case the action, whose kanji 漢字 will be:

Go = number five

Go = postpone

It has also been made clear that the counterattack demonstration kaeshi no kata 返 の 形 is not a real kata 形, largely due to linguistic confusion. Kaeshi kata 返 へ し 方 rather than kaeshi no kata 返 の 形, so without the possessive particle no の. In fact, it represents the title of a series of articles written in the 1920s by professor Takahashi 高橋 of Waseda University 早 稲 田 大学 (Tōkyō 東京)

kata and kata

Professor Takahashi's articles were based on the principles of kaeshi 返 へ し counterattacks, very vague techniques that had never been transformed into a form intended as kata 形. Unfortunately, it was not possible to have access to these sources and to a deep knowledge of the author's intentions, confusing the two homonyms and the different meaning they represent, but both read kata 形.

If we speak about Karate Kata and Judo Kata, there are very big differences in these two words as ideogram with the same sound. Referring to Karate, the ideographic part is composed of two main parts, one upper and one lower.

(1) Kata of karate

(2) Kata of judo

The first part is a common basis of the two interpretations indicating "good", but if we add two other signs it indicates a "rule", a "condemnation", by extension "prisoner of the model", that is a "form closed "which suggests something codified that does not allow a change.

The second part refers to the earth, the ground, the gravitational shape, the void, which serves to create the shape of objects.

Kata

Good

closed form

Earth

By choosing the second ideogram 形 , Kanō Jigorō 嘉納 治 五郎 became the first in the history of the "arts of skill", known in the West with the misleading concept of "martial art", to have adopted this kanji indicating the kata 形.

The first ideogram is included in the closed expressions of exasperated repetitiveness. What may seem to a layman, a form of enslaving and almost robotic learning, is for the Japanese expert a method of instruction that allows him to have access to his own intrinsic potential.

The second instead used in Judo, open form, brings the Judoka to self-expressive and creative opportunities.

And this is precisely the purpose of this technical-cultural text, which considering the basic form of the archetype of the principle of forces, in its open form, wants to encourage at all levels the self-expression and creativity of the judo practitioner, finally to make his lesson not a passive and monotonous learning, but an ocean where one can enter to discover new shores and new worlds and why not also new techniques.

Historical-interpretative introduction

The foundation of non-resistance, cornerstone of judo, in a first stage was considered by Kano Shihan in its purely rectilinear execution. However the search for more evolved principles continued, and led to the incorporation into the Kodokan method of ltsutu no kata, or kata of the five principles.

Everyone knows that this Kata derives from the ancient school of Ju Jitsu: Tenjin Shin yo-ryu jujutsu in which it was known under the name of "Tenjin Shin yo-ryu goku'i kuden gohon".

Tenjin Shin'yō-ryū Goku'i Kuden Gohon Terminology (from [2])						
	Tenjin Shin'yō- Category		*Tenjin Shin'yō-ryū* Names			
	Kanji	Pronunciation	*Kanji*	Correct *bungo* pronunciation	Erroneous pronunciation*	English translation
1	口伝一本目	*Kuden ippon me*	押返	*Tao-kudashi*	*Oshi-kaeshi*	Forcing back
2	口伝二本目	*Kuden nihon me*	曳外	*Hiki-wazashi*	*Ei-ge*	Evasive pulling
3	口伝三本目	*Kuden sanbon me*	巴分[a] 円分[b]	*En-no-wakare*[a]	*Tomoe-wakare*[b]	Swirling separation
4	口伝四本目	*Kuden yonhon me*	退倒[c] 浪引[d]	*Do-tō*[c]	*Rō'in*[d]	Withdrawing wave
5	口伝五本目	*Kuden gohon me*	天地分[e] 石火分[f]	*Tenchi-no-wakare*[e]	*Sekka-wakare*[f]	Heaven/earth Instant separation

Even Aikido has among its kata the Itsutsu No Kata, but with some small differences, from what the Kodokan and M ° Kano have handed down to us.

The teachings of Yoshin Ryu, of course, have evolved over time and have been handed down from master to disciple according to ancient methods; traces of this can be found in the training programs attributed to the Kito and Tenjin schools.

The five main techniques have become, according to some, movements aimed at making people understand the polarity of being and the natural means that can be used to combat violence and tyranny.

These are the same 5 movements that would have been preserved by Jigoro Kano and who in 1887 gave an updated version. In this new mode of expression, the movements between the partners have been spaced to better articulate the forces of the cosmos and to mitigate the attack and defense that is too direct. It seemed more reasonable to emphasize the possibilities of man to use his forces in harmony with nature. In this new version the attacks were absorbed and the responses made more harmonious and less aggressive. The defenses are representative of a style of non-action (internal force) that prevails over the opposition that acts directly (external energy).

Kano Sensei himself seems to have said among his various reflections that the Itsutsu No Kata is an aesthetic-philosophical vision of the principles of the use of forces and therefore of the best use of energy in Judo.

A form in which universal scientific perceptions are founded with deep esoteric meanings that lead back to the universal flow of reality, the stylized forms of use of forces.

Since Kano Sensei had not finalized this kata and the descriptions remained inaccurate, the terminology used today by the leaders of the Kodokan simply reflects the Ordinator of the elements or degrees of study, namely: Ippon, Nihon, Sanbon, Yonhon and Gohon Me.

Kano Sensei loved this kata and wished that the immediate future would allow him to create other kata of this magnitude to develop the aesthetics of martial arts while continuing to train the body effectively. This rather hermetic symbolic execution can be read and interpreted on different levels and with different degrees of depth and represents the extreme synthesis of Kano Shihan's scientific-philosophical thought.

A **"Physical"** reading of the kata could be limited to identifying ways of using forces:

1) The use of direct force
2) The exploitation of direct force
3) The use of centripetal acceleration
4) The use of reflected force
5) The use of inertia

A **"Naturalistic"** reading could be:

1) the drop that continuous beats
2) The water
3) the whirlwind
4) The wave
5) The abyss

A **"Moral"** reading could be:

1) Perseverance
2) Humility (welcoming)
3) The attraction-repulsion
4) Reluctance
5) The annihilation of himself
and so on.

Unfortunately, this synthesis has remained unfinished, but it is an interesting cultural challenge to try to bring it to completion; in this case, for example, a solution could be the last principle could be the same as the first, thus representing the end of the cycle and the continuous renewal of nature.

Some reflections on the Itsutsu no Kata presented by Noboru Saito appear interesting. Itsutsu no Kata was included as part of the Kodokan Kata in 1887 by Jigoro Kano Shihan.
Kano Sensei studied at the Tenjin Shinyoryu Jujitsu School, first with HachinosUke Fukuda, with M. Iso and also Keitaro Inoue for eight or nine years before founding Kodokan Judo. Dr. Kano learned Itsutsu no Kata from the Tenjin Shinyoryu Jujitsu School. This kata was taught as "Okuden" (last skill to be taught) and on individual instruction from the school teacher. According to the memoirs of the Tenjin Shinyoryu Jijitsu school, the names of the techniques are:

1. **Oshikaeshi** (continuous push)
2. **Eige** (Attract and Drop)
3. **Tomowakare** (Separation)
4. **Roin** (pulling tide)
5. **Settsuka no wakare** (instant separation)

Here a first semantic interpretative problem arises. It seems that the five movements of the Isutsu No Kata have different names in the tradition of the Japanese Masters and of the various schools. According to (Noburo Saito and Munenori Shiigi), as we have seen "Kano Sensei learned Itsutsu no kata from the School of Tenjin Shinyo Ryu". This kata was taught to him directly by Head of school as "Okuden" (last skill to be taught); and according to the annotation of the Tenjin Shinyo Ryu School (Noburo Saito) the names of the techniques seem to be the following:

1. **Oshi Kaeshi** (Continuous Push)
2. **Eige** (Pull To Self)
3. **Tomoe Wakare** (Separation In Circle)
4. **Roin** (Ebb of the Tide)
5. **Settsuka No Wakare** (Immediate Separation)

According to Shiigi Sensei these are the names, slightly different.

1. **Oshi Kaeshi** (Repel)
2. **Hiki Hazushi** (Pull To Self)
3. **Tomoe Wakare** (Joining And Separating)
4. **Namihiki** (Undertow)
5. **Sekka No Wakare** (Overcoming An Obstacle)

According to Maruyama Sanyo Sensei 9th Dan

1. **Tentai** (body of Heaven)
2. **Chi Tai** (body of Earth)
3. **Ku Tai** (body of Air)
4. **Fu Tai** (Wind body)
5. **Uchu Tai** (Universal body)

Another similar kata based on the Five Elements that comes from the school of Takenouchi Ryu, which In time has influenced both Tenjin Shin Yo Ryu and Kito Ryu. It has the following names for the five movements:

1. **Tao Kidachi** (Wind, Constant Force)
2. **Hiki Otoshi** (Water, Force That Pulls Away)
3. **En-No Wakare** (Tornado, Force That Takes And Rejects)
4. **Do-To** (Tsunami, Force That Comes And Brings Back)
5. **Ten Chi-No Wakare** (sky, air, invisible but terrifying force)

Conclusions: it is deduced that each Master of his School of Ju Jutsu, after reaching a certain level, gave their own definitions according to their personal vision.

Kano Shihan recognized that Itsutsu no Kata demonstrates the principle of maximum efficiency, yet the graceful movements were also evocative of the movements of the universe.
Kano Shihan held this kata as part of Judo.
Kano Sensei was thinking of renaming the techniques but he died before giving them a name.
It seems that Tadao Inogai kata professor at the Kodokan said: "Only high-ranking judoka can understand and perhaps one day clarify Jigoro Kano's interrupted message." In this kata, the representative movements must be performed with a normal movement and in a continuous sequence, without interruptions in time.

Today the 5 movements are identified only by the ordering number, again according to Nolburo Saito, the way in which Kodokan performs this kata is slightly different from the Tenjin Shinyoru school:

Ippon me. Demonstrates the principle that will bring a rationalized attack and continue to defeat even a strong power
Nihon me. Demonstrates the principle of using the energy of the opponent's attack to defeat them
Sanbon me. Demonstrates the vortex principle, in which the inner circle controls the outer circle
Yonhon me. Demonstrate the power of the ocean tide: the tide will draw all shore into the ocean, no matter how big
Gohon me. Demonstrates the principle of surrender: when two unlimited energies collide with each other they avoid each other so as not to destroy both.

Another reading is given by Tadao Inogai Sensei:
For Jigoro Kano, creator of judo, isutsu no kata represents the real "heart" of judo.
It constitutes the synthesis of all the fundamental forms of "tai sabaki".
the isutsu no kata wants to illustrate the correspondence, the communion of the fundamental forms of judo with the great cosmic principles of universal harmony and balance in their continuity and cyclical alternation.
To facilitate understanding, we can define the techniques of this kata as follows:

1st Form: principle of concentration of energy and action, force used wisely and rationally
without interruption leads to imbalance.
2nd Form: principle of reaction and not resistance, dodging and taking the strength of the other, mastery of attack using the opponent's strength.
3rd Form: cyclic principle of centripetal and centrifugal force, principle of the cosmos (universe nature), two galaxies
they rotate and approach, two forces rotate around each other, they do not meet, but repel each other.
4th Form: principle of alternation, of the pendulum (ebb and flow of the sea), a furious wave arrives on the shores and retreats taking everything in its path.
5th Form: principle of vacuum or inertia, two galaxies move on the same orbit, collision is inevitable but instead does not occur.

The general principles correspond respectively to the qualities of will - flexibility - mastery - timeliness and speed of adaptation.
The techniques over time have had different names up to the current ones, as can be seen from the following table:

Kōdōkan Itsutsu-no-kata Terminology (from [2] based on [4,5])							
	1939	Pronunciation	English Translation	1956†	Pronunciation	>1971	Pronunciation
1	天体	*Ten-tai*	Heavenly body	第一の形	*Dai'ichi no kata*	一本目	*Ippon me*
2	地体	*Chi-tai*	Earth body	第二の形	*Daini no kata*	二本目	*Nihon me*
3	空体	*Kū-tai*	Air body	第三の形	*Daisan no kata*	三本目	*Sanbon me*
4	風体	*Fū-tai*	Wind body	第四の形	*Daiyon no kata*	四本目	*Yonhon me*
5	宇宙体	*Uchū-tai*	Cosmic body	第五の形	*Daigo no kata*	五本目	*Gohon me*

Ippon-me; Nihon-me; Sanbon-me; Yonhon-me; Gohon-me.

If we see them as TORI's general ways of using and applying forces upon UKE then Gensoku No Genkei flows easily.

The idea inherent in Gensoku is to complete the description of the principles according to the judo philosophy "Best Use of Energy" that through the correct and effective use of the opponent's strength.

I tried not to use known judo techniques but to show in its simplicity only essential movements, with appropriate Tai Sabaki without the classic judo holds. The archetype of the principle of the use of forces. The archetype is the first and most basic form, that is, the simplest possible example of the use of force.

In the first five actions it illustrates in Active form (Itsutsu) how to apply the forces on UKE and then in the second five (Gensoku) how to use to one's advantage the same movements that TORI performed in the first five. In this second part of the Kata the roles of TORI and UKE are inverted. UKE applies the forces in the same way as TORI by performing the same movements of the first five, TORI exploiting the movements of UKE performs his projections in the simplest way possible without judo techniques and without holds, but with essential actions: "The archetype" of the principle or (Gensoku No Genkei = 原則 の 原型) of using forces

It is the search for balance between body and mind. Between action and use. Cause and effect. Opportunity and execution. Situation and solution, etc.

Roppon-me. Nanahon-me; Happon-me; Kyuuhon-me; Juppon-me

Qualitative Biomechanics and Research of Forces' Archetype

Thanks to the anatomical studies started systematically during our Renaissance, it can be said that all systems of the human body, including the muscular system, are designed on the basis of entities called forces.

These FORCES drive the many functions of this extraordinary and complex machine.

This machine contains many smaller machines of different types: pulley systems, levers, pairs that allow this body to act, move and use an infinite amount of inventions we interact with today, which are actually inspired by the mechanics observed in the human machi

Forces originate from the muscles. The muscles of the human body combine form and function to produce movements ranging from the delicate precision and grace of a dancer to the explosive power of a judoka. But muscles do more than just move the body - they provide warmth, protection and support, and they convey information about human experiences through the control of facial expression.

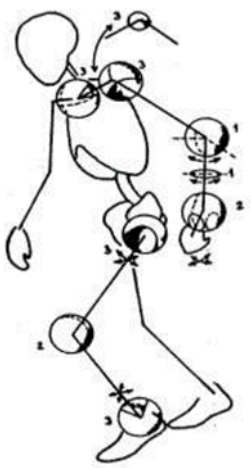
The muscles that direct the skeletal system are said to be under voluntary control and take care of movement, posture and balance.

However, there are also a number of muscles that work automatically, performing vital functions such as heartbeat and digestion while allowing conscious thinking to focus on other activities. But it is not a lesson in muscle anatomy or biomechanics that we want to explain, but rather to understand if it is possible to find the archetype of the principle of forces, that is: ***the simplest movements that allow you to develop forces on an external body***. In our case that of the partner / opponent.

The archetype of these movements is the one we want to express in Gensoku No Genkei, in order to be able to teach the basis of the use of forces in a simplified way, which will then be expressed in a more complete, complex and effective form through the throwing techniques of Judo that we know which were, with a skilful work, distilled by Kano Sensei from various schools of wrestling and Ju Jitsu.

One of the first definitions of force formulated by Newton reads: "***The innate force of matter is a power of resistance by which everybody, as much as it lies in it, continues in its present state, whether it is at rest or moving uniformly forward in a straight line.*** " This makes us understand that the trajectory is an important part of the concept of Force.

Therefore the archetype of the principle of the use of force could be based ***on straight trajectories***. But if we analyze the concept of force linked to the human body construction, we discover with amazement that due to its constitution and through its joints, ***man can only perform rotations or arcs of circles***.



Therefore, a well-known biomechanical theorem states:

A series of rotational joint movements corresponds to a translation, if the necessary and sufficient condition is satisfied, that the sum of the relative joint angles engaged in the movement is zero, while it corresponds to a rotation if the sum of the relative joint angles is different from zero.

Therefore, it is natural for humans to perform rotations, while rectilinear translations are the particular case in which the sum of the relative angles of the joints engaged in the movement is zero. Therefore***, for an Human body displacements on curved or rotational trajectories will be more plausible as an Archetype of the movement to apply force.***

While everyone knows that the simplest action to apply force through an arm will be the push-pull. So, on the basis of this qualitative biomechanical analysis, we can identify both the movements and the use of the simplest forces to use in the didactic situations we want to face, without applying the classic judo holds

So, we define in this way the Archetypes of the principle of the use of forces and the movements associated with them.

By imposing the constraint of the concept of not wanting to carry out defined Judo throwing techniques; the basic movements of the use of forces that correspond to the least use of energy and to the greatest simplicity are: horizontal pushes or pulls carried out with the arms which, using the third principle of the dynamics through the feet, develop the strength to make the opponent / partner fall with movements of the body or translational or rotational or with their simplest possible combination.

This in general, both in the case of direct use on the partner / opponent to make him fall, and in the case of the use of his strength or movement to our advantage; the goal is to make your partner / opponent fall.

The biomechanical technical reason why the fall on the Tatami occurs, in the earth's gravitational field, is given only and exclusively by the principle of the lever, which in the simplest case essentially involves a push (1th Itsutsu technique) or a pull by the applicant (TORI) (6th technique of Gensoku), in both situations, the fulcrum is always given by the friction produced by the feet of the partner / opponent (UKE) on the Tatami. The two situations mentioned describe the simplest use of force archetype that is the basis of all Judo techniques.

Judo techniques are therefore often a combination of these simple ways due to the dynamic variability of the athletes' movements on the Tatami, and the more the technique is energetically convenient, the more one has to approach this simple archetype.

So, summarizing we can describe the four basic conditions identified, which describe the simplest archetype of the use of forces, in the earth's gravitational field, without applying Judo's holds:

1) Horizontal push.

2) Horizontal traction

3) Rotational movement trajectory

4) Lever Principle

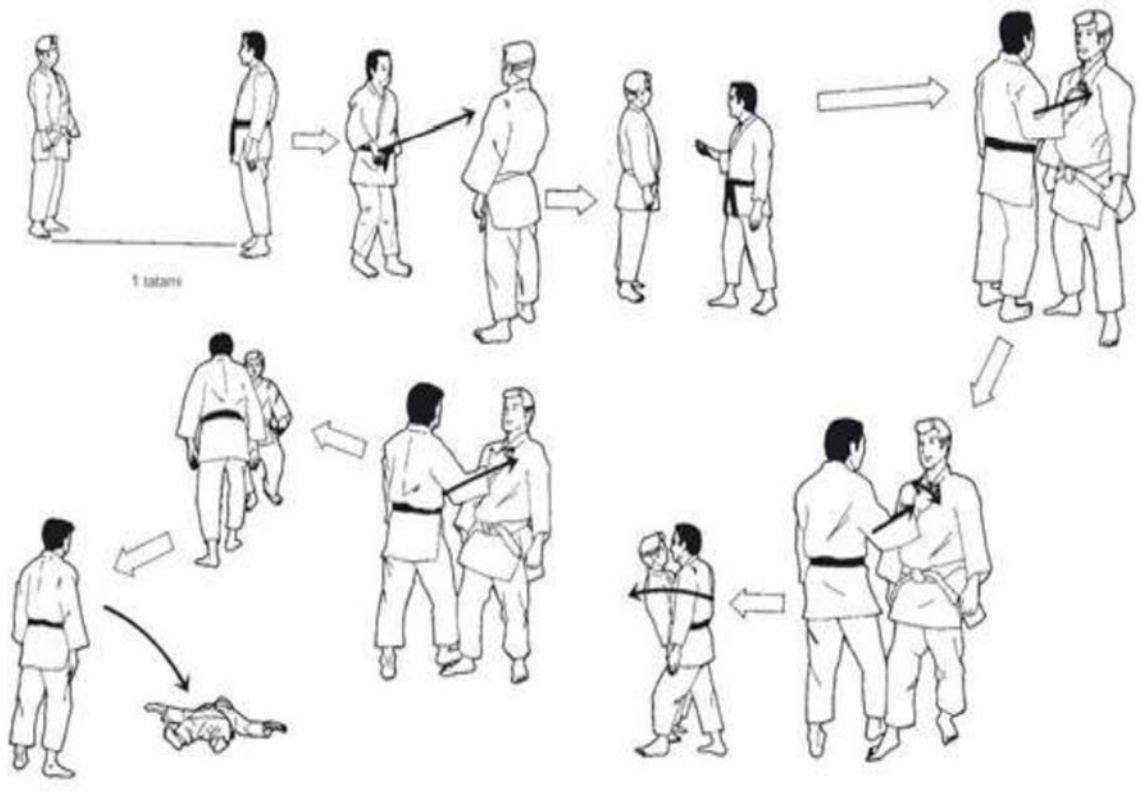
All other movements will be energetically more expensive, always considering the set of all possible levers to be applied on a Tatami in the earth's gravitational field, without applying the traditional judo holds (obviously in this idealization UKE is considered the partner / opponent who makes a bland resistance).

GENSOKU NO GENKEI (原則 の 原型)

Advanced Form

Ippon me

After finishing "Beginning formalities" , Uke steps forward silently with his left foot to take Shizen hontai on the center of Dojo . After Uke takes Shizen hontai, Tori steps forward silently with his left foot and get closer to Uke, while putting his right hand on the lateral side of Uke's body, extending his palm forward and slowly raising his forearm as Tori gets closer to Uke. After getting close enough to touch Uke's right shoulder with his right shoulder, Tori deploys five fingers of his right hand and lays his palm firmly on the center of Uke's chest with fingertips upward. Tori's right foot shall be on the outside of Uke's right toe. Then, Tori applies force with his small finger side and then Tori's thumb side alternately to push Uke to break Uke's balance backward. While being pushed, Uke retreats with his left and then right feet and tries to restore his standing posture. As Uke retreats, Tori steps forward with his right and then left feet, while continuing to push firmly on Uke's chest with his right hand. Upon Uke's being pushed backward and unable to sustain his standing, Tori takes a larger step forward with his right foot to push down Uke backward. Uke falls down on his back without raising his feet and takes Ukemi backward by hitting Tatami with both hands (Uke falls down with Jizo-daore).



Nihon me

After finishing Ippon-me, Tori retreats with his right foot while returning his right hand to his side to take Shizen hontai. Uke from the lying down position places his right knee on Tatami, then raises his left knee and standing up with his right hand as Tegatana (hand sword) , Uke steps forward with his right foot to

thrust with his Tegatana at the center of Tori's abdomen. Tori retreats with his left foot, turns to his left to avoid Uke's attack, grips the wrist of Uke's right hand from outside with his left hand, while putting his right palm (with thumb facing upward) on the inside of Uke's right elbow, and puts his left knee on Tatami to pull down Uke toward that direction with both of his hands . Uke turns over laterally with a pivot of his right toe.

Sanbon me

After finishing Nihon-me, without a pause, Tori and Uke stand up from the previous positions. Tori with his left knee on Tatami then standing; Uke with his buttocks on Tatami, raising his right knee with his left knee on Tatami then standing. While leaning their bodies slightly forward and stretching their arms laterally (with palms facing forward and fingers naturally extended), taking postures like two birds that have widely extended both of their wings. Both Tori and Uke turn counter-clockwise like a vortex to get closer and closer to each other. When Tori faces Shomen diagonally leftward on the center of Dojo, both Tori and Uke touch each other by crossing their right arms lowered and their left arms raised. Both Tori and Uke push up their right arms while pushing down their left arms so as to counterbalance each other's force, and turn counter-clockwise sharply with gradual acceleration. At the moment Tori breaks Uke's balance on the right front corner, Tori slides both of his feet toward the outside of Uke's right foot and "sacrifices" his body onto his back to throw Uke over his body to the front side of the right corner toward Shomen. Uke forward rolls over Tori's body diagonally, while turning far forward, and stands on Tatami.

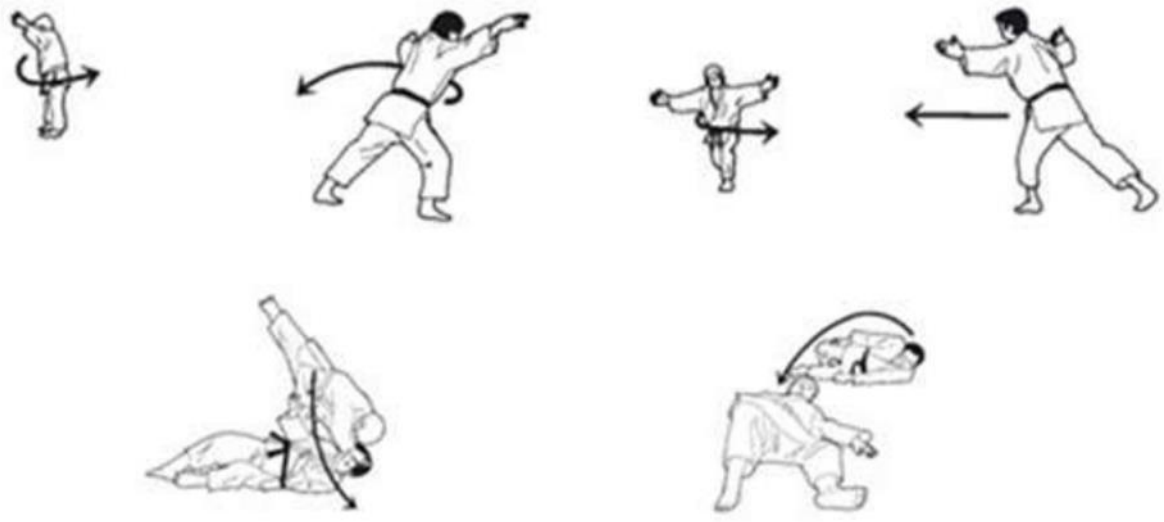
Yonhon me

After finishing Sanbon-me, Uke stands in Shizen hontai on the same spot facing the front side of the right corner toward Shomen. After standing up, Tori moves to the back side of the left corner toward Shomen and stands in Shizen hontai facing Uke with a distance of about 7 m . While watching Uke, Tori retreats his left foot diagonally backward, lowers his waist and swings up both of his arms from the front side of his

body toward the left and back side, while twisting his upper body leftward. While bending forward, Tori swings back both of his arms forward, starts to walk toward Uke by Ayumi-ashi and, with gradual acceleration, to a runs and stops about 1 m in front of Uke, raising both of his hands with palms facing forward and stands upright, while sufficiently stretching his whole body (with his heels raised from Tatami). After a breath, while lowering both of his hands laterally to the level of his shoulders (with palms facing downward), Tori slowly retreats with 2 or 3 steps and puts his right elbow on Uke's chest and attempts to break Uke's balance backward by pushing . While being pushed backward, Uke retreats gradually and slowly. While applying more force with his right arm to push Uke, Tori retreats further and, upon Uke's being unable to sustain his standing, puts his left knee on Tatami (when putting his left hand on the lateral side of his body) to push down Uke backward. Uke falls down on his back and takes Ukemi.

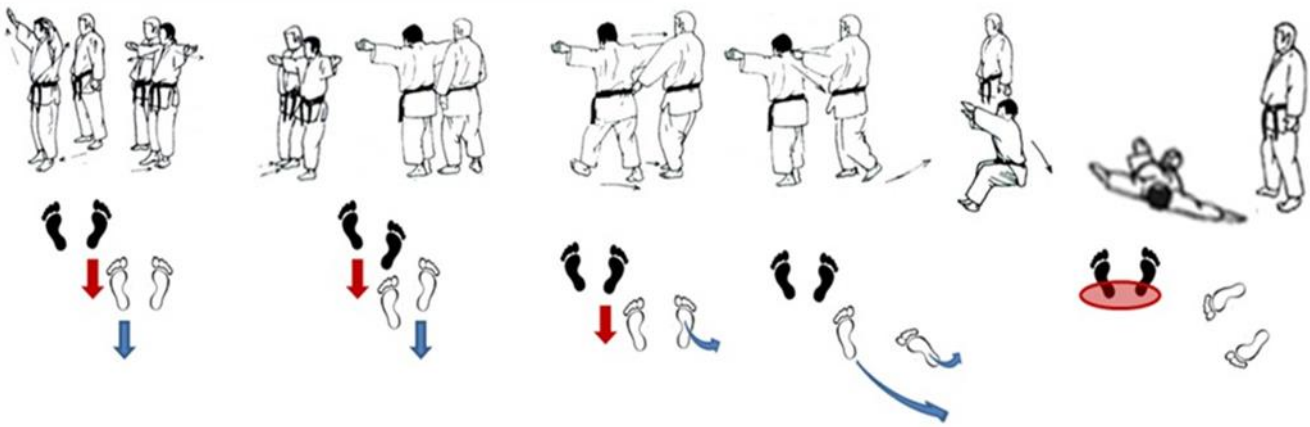
Gohon me

After finishing Yonhon-me, Tori moves to the front side of the right corner toward Shomen and Uke, after standing up, moves to the back side of the left corner toward Shomen and then, both stand in Shizen hontai diagonally from each other at a distance of about 8 m, with their backs to each other. After a breath, both Tori and Uke step forward with their right feet and spread both of their arms widely (just like holding something large and round), while taking Migi jigo tai position. Both twist their bodies to their left with pivots of their left feet and, upon facing each other, they both move forward with gradual acceleration. Immediately before they are about to collide with each other, Tori slides his left and then right feet toward the outside of Uke's right foot and, while turning his upper body to his left and lying down on the left side of his lateral body, “sacrifices” his body underneath Uke's legs (with both of his hands on the abdomen). Uke forward rolls over Tori's body diagonally, while turning far forward, and stands on Tatami.



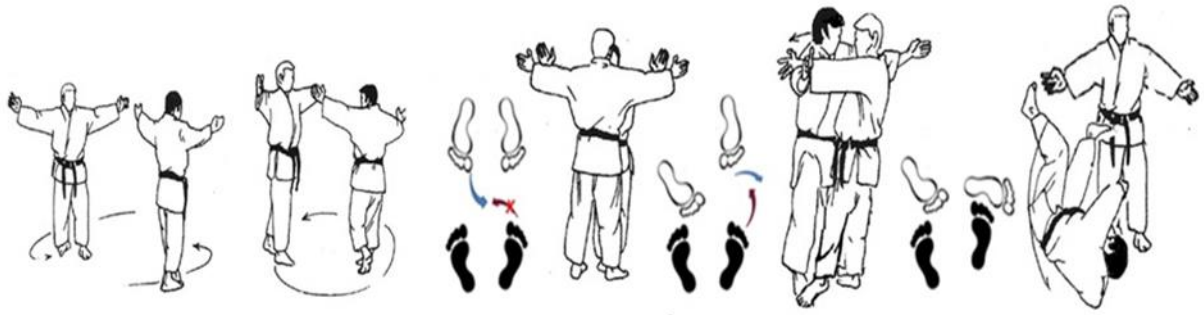
Roppon me

Uke performs the movement of the fourth technique in the wave and coming back, makes contact with his right arm with Tori's chest. After the first push Tori with his left hand grabs Uke's collar (four fingers in thumb out) and rotating towards his right exterior accentuates traction causing Uke to fall onto his back while he checks it with his eyes.



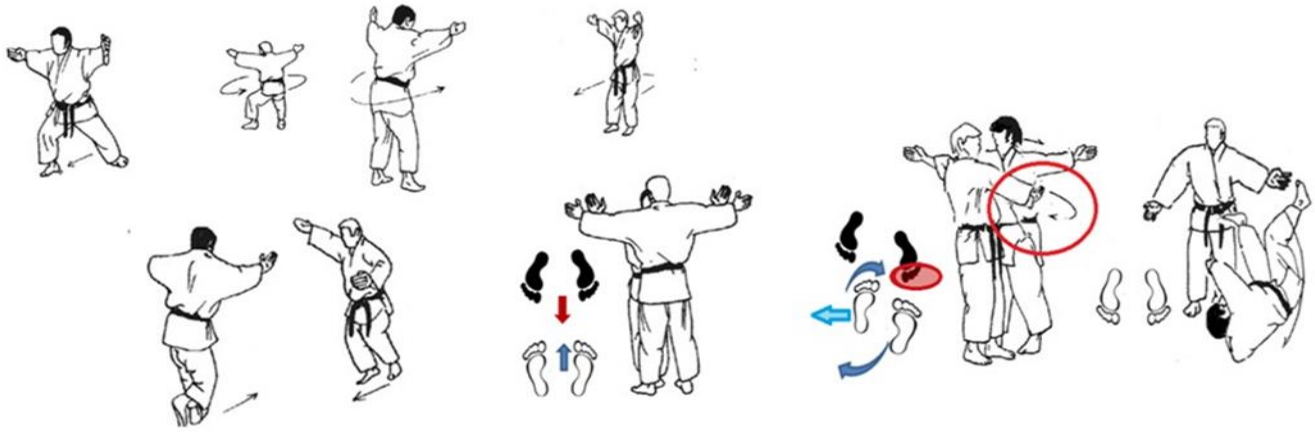
Nanahon-me

Uke gets up and begins the rotational movement of the third technique, Tori also approaches by turning and before Uke can throw himself into yoko wakare, Tori (a) brings his right leg forward and (b) extends his left leg to block the Uke's rotation, throwing it with a spinning trip.



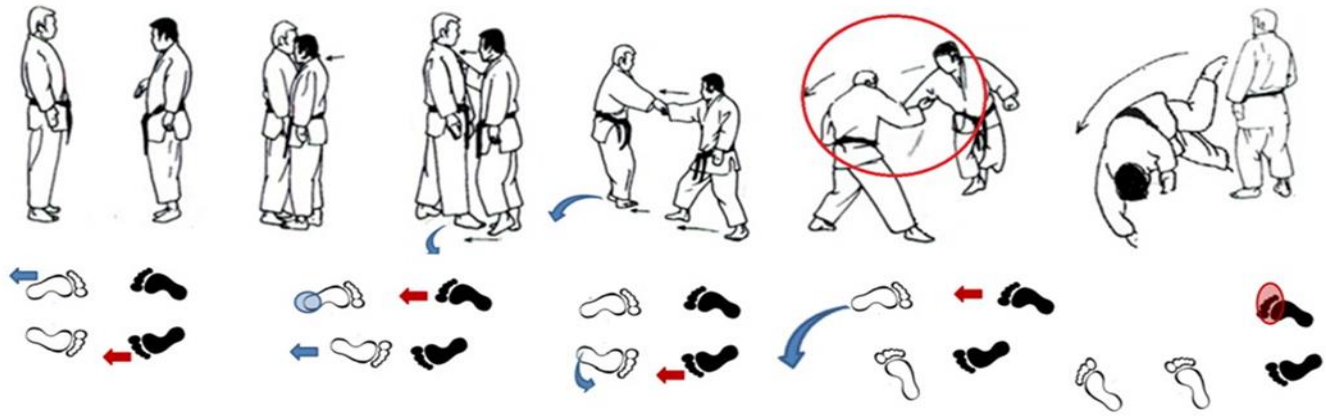
Happon-me

Uke and Tori reach the edge of the area and as in the fifth technique they position themselves then rotate and launch towards each other, but in this case Tori does not let himself fall but deviating slightly towards his left makes sure that the collision with Uke's chest is not full frontal, and shortly before the collision, he reaches out his right hand and rotates towards his left bringing his right foot behind him. While making this rotation he grabs UKE's back and uses UKE's speed to deflect UKE's own force towards the void and helping the consequent rotation of UKE's body throws UKE to TORI's right. (Like a rotated dance step)



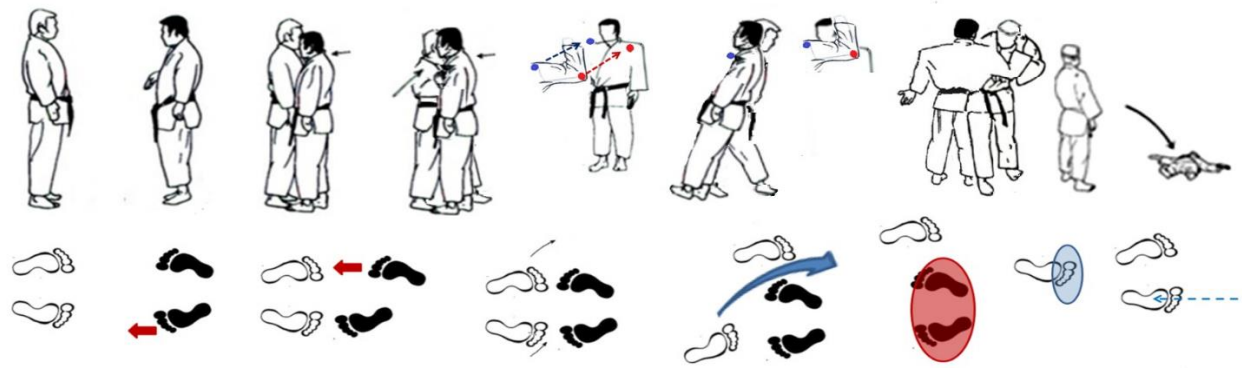
Kyuuhon -me

Uke approaches Tori in the center as in the first technique. before Uke can touch Tori, Tori takes two small steps backwards (1 -2 - 3), and when Uke reaches out his hand to push, Tori immediately rotates towards his right going backwards with his left foot and at the same time grasps with both hands Uke's extended right arm (4) and throws Uke as in the second technique while remaining standing.



Juppon-me

Same action as Uke that starts from the opposite side, but this time Uke aware of the previous action does not extend his hand, and Tori in turn does not retreat. As soon as Uke tries to touch Tori to push as in the first technique, Tori initiates a sen no sen by taking a large step forward with the right leg while simultaneously throwing the right arm forward with the elbow resting at about the hollow of UKE's left shoulder. Tori extends his right arm forcing Uke to fall—the middle top picture on page 23 shows how tori's right arm from tori's wrist to tori's elbow is exerting force onto Uke's upper body.



The execution of the ten techniques takes place without downtime in a harmonic and continuous movement like the flow of a fluid.

In the ideal placement in an educational facility for the elderly after the basic gymnastic movements and the fundamentals of position and displacement the fundamentals of positioning the body (Shisei) and displacement (Ayumi and Tsughi Ashi, and Tai Sabaki), it is possible to insert the Ukemi and finally the Gensoku No Genkei as an archetype of 'use of forces on an opponent, after which the Kumi Kata could follow, the execution of the fundamentals of position and movement in pairs and finally the beginning of the throwing techniques. For better understanding the sequence could be:

1. Start with the basic gymnastic movements and the fundamentals of positioning the body (Shisei) and displacement (Ayumi and Tsughi Ashi, and Tai Sabaki),

2. Kumi Kata,

3. Ukemi

4. The execution of the fundamentals of position and movement in pairs

5. And finally the beginning of the throwing techniques of the Gensoku no Genkei as the archetype of “the use of forces on an opponent.”

Another acute use before the Itsutsu No Kata and certainly of the more complete Gensoku No Genkei is based on the intuition of Mister Capelletti 10 Dan, who in fact reflected only on Itsutsu, but we extend his conclusive reflections in an obvious way also to the Gensoku No Genkei which can be used to develop the interpretative fantasy of the mature pupil.

Who to a certain situation, in which the type of strength shown in Gensoku No Genkei develops, can apply the most suitable solution technique both to his physical, athletic and technical skills.

This intuition is well connected with my personal studies and with the biomechanical conclusions I have reached after years of in-depth analysis. In fact, from a philosophical point of view, Biomechanics makes you lose the concept of a unique technique (the special) that can solve one or more specific situations (of combat) but, teaches us that , after identifying the two "physical" tools to project the opponent's partner, that is : the Leverage Principle and the Couple Principle; each of them, or an adequate linear combination of them, can always be applied as the appropriate measures to "solve" all the situations that the partner / opponent poses. While always remembering that excellent coordination is required to apply lever techniques, while the simpler couple techniques from a motor point of view need adequate timing to be applied. So there
are no longer 40 or 67 "form and fit" techniques that must be used, but two principles that are applied acco rding to your choice--obviously depending on your personal technical knowledge and physical-athletic skills. This way of reflecting and acting allows the development of movements and techniques different from those known, thus encouraging the inventiveness and imagination of the mature student who, free from rigid teaching schemes, can set sail towards new discoveries of new solutions in the sea of infinite possible situations that an opponent can generate with his own movements as opposed to his own.

Biomechanics of Gensoku No Genkei (原則 の 原型)

Regarding the biomechanics of the movements of Gensoku No Genkei, their mechanical description can be expressed in various forms, but in order to try to be as close as possible to the artistic vision and not only to the phenomenological one, I preferred to choose the fluid-dynamic description of the techniques, not just remembering Koizumi Sensei and his famous words. " Judo is like water .... " But, also because fluid dynamics describes air or water with the same equations in an organic synthesis that is well suited to the description of the five techniques of Itsutsu no Kata.

So on this track we can describe the first technique of Gensoku no Genkei as the force described by an increasing wind flow or a pressure wave generated by a sea wave. And so, we write:

Ippon-me represents the method of using force in Judo exemplified as the pressure of a fluid wave on Uke's chest

1) $P = -\rho g z + \rho g \eta \frac{\cosh k(h+z)}{\cosh kh}$

Nihon-me represents how to take advantage of the strength of the opponent's attack and thus defeat him

The force exerted by the wave can be simply calculated by integrating the previous pressure, avoiding, given the shortness of the paragraph, heavy, but obvious calculations, we get:

2) $F = \rho \frac{gh^2}{2} + \rho g h \frac{\tanh kh}{kh}$

Sanbon-me represents, in this dynamic fluid approximation, two waves that meet in a whirlpool and the internal wave launches the external wave with a rotational force. The global equation of the phenomenon can be described as:

3) $\nabla p - \mu \cdot \Delta v + \varrho (v \cdot \nabla) v - \varrho \, F_m = 0 \quad con \;\; F\_m = g \xi S$

While the tangential throwing force tourns out to be: $F_t = \; m a_T^{1/2} - m \left(\frac{v^2}{r}\right)_c^{1/2}$

Yonhon-me represents the way to use the force of the totally reflected wave, which after reaching its maximum, returns to the sea with different intensity and amplitude, so the pressure exerted will simply be:

4) $P = +\theta \rho g z - \theta \rho g \eta \frac{\cosh k(h+z)}{\cosh kh}$

Where $\theta = A\_r / A\_i$ coefficient describes the relationship between the amplitude of waves.

Gohon-me represents safeguarding one's integrity by making the opponent's action go blank by avoiding applying any force or pressure to him. Therefore, the motion of both fluid bodies can individually be described simply by the Euler equation for fluids, which describes most of the oceanic phenomena sufficiently well.

5) $\frac{\partial v}{\partial t} + (v \cdot \nabla) v = \frac{1}{\varrho} (\nabla P + F_{est})$

Roppon-me. represents the way to exploit the force of the totally reflected wave, which after reaching its maximum, returns to the sea with different intensity and amplitude, so the force exerted will simply be the sum of the return pressure added to the suction carried out by Tori

6) $P = +\theta\rho gz - \theta\rho g\eta \frac{\cosh k(h+z)}{\cosh kh} - m\frac{D\omega}{Dt}\cos\beta$

Where $\theta = A\_r/A\_i$ coefficient describes the relationship between the amplitude of waves.

Where $m\frac{D\omega}{Dt} = m(\omega \cdot \nabla \mathrm{u} + \mathrm{v} \cdot \nabla^2\omega)$ Force of the suction carried out by TORI

Nanahon-me; represents Tori's way of exploiting the vortex action generated by Uke who wishes to launch it with an En-No-Wakare, but Tori undergoing the vortex action of Uke exploits it by preventing UKE from carrying out the technique. Thus the external wave launches the internal wave and launches it with the application of a rotational trip (principle of the Lever) which exploits the movement of Uke

7) $\nabla p - \mu \cdot \Delta v + \varrho(v \cdot \nabla)v - \varrho\, F_m = 0 \;\; con \;\; F_m = g\xi S$

While the tangential throwing force turns out to be: $F_t = ma_R^{1/2} - m\left(\frac{v^2}{R}\right)_c^{1/2}$
With R radius of the external wave

Happon-me; represents on the part of Tori the way to exploit the impact pressure of the wave represented by Uke who wants to hit him directly,Tori faces the wave directly and at the last moment before the ruinous impact for him, he instantly deflects, and redirects Uke's impetus towards the ground with the principle of the Lever

8) $P = -\rho gz + \rho g\eta \frac{\cosh k(h+z)}{\cosh kh} + m\frac{D\omega}{Dt}\cos\beta$

Where $m\frac{D\omega}{Dt} = m(\omega \cdot \nabla \mathrm{u} + \mathrm{v} \cdot \nabla^2\omega)$ Force of the suction carried out by Tori

Kyuuhon-me; represents the way to exploit the Uke's attack by lengthening of the distance with addition of an external rotating suction force directing Uke's impetus towards the ground with the Lever principle

9) $F' = \rho\frac{gh^2}{2} + \rho gh\frac{\tanh kh}{kh} + F_{est}$

Where $F_{est} = m(\omega \cdot \nabla \mathrm{u} + \mathrm{v} \cdot \nabla^2\omega)$ Force of the suction carried out by TORI

Juppon-me represents the principle sen no sen. Uke cautioned by the previous error does not stretch his his arm to hit Tori and continues to advance to be able to perform the nine technique of Gensoku (similar to the first Itsutsu technique). At the moment Uke attempts to place his hand, Tori instantly takes a large step the moment Uke attempts to place his hand instantly Tori takes a large step towards Uke and hits Uke's chest with his arm forward with the elbow, resting at about the hollow of Uke's left shoulder ; producing the counter pressure that causes Uke to fall.

10) $P = \rho gz - \rho g\eta \frac{\cosh k(h+z)}{\cosh kh}$

These movements are as simple as possible to enable Tori to exploit the movements of UKE.
They may, at first glance, appear banal, but their simplicity hides in itself complexity of wanting to solve the specific situation without applying known Judo techniques, using the most possible natural body movements that are the basis of the Judo throwing techniques, that have been transmitted to us.

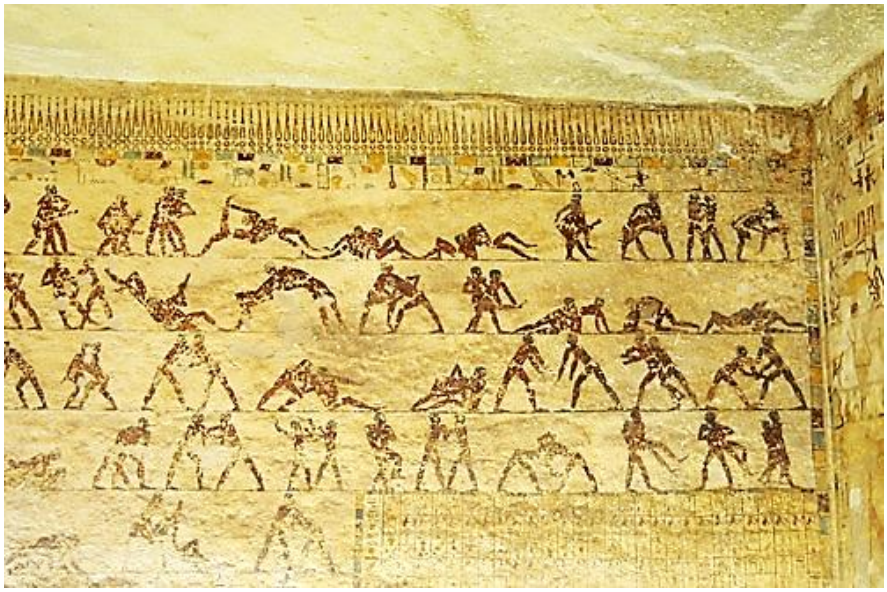
If the execution of the movements is analyzed more carefully, it can be seen from the biomechanical point of view that they all belong to the techniques of Lever Group, which appear to be the most natural available, as already indicated in the qualitative biomechanical analysis of Archetype of the principle of the use of forces research.

In fact, the biomechanical analysis developed on the basis of a brilliant study carried out by Prof. Elisabetta Visalberghi, a well-known international expert in primate cognition, research director at the Institute of Cognitive Sciences and Technologies.

It led to the following results. The study, relating to the fighting of primates among them, highlighted that the monkeys use, among themselves, **only Lever techniques and never Couple techniques, that are amazingly of human application only.**

Couple Techniques therefore, can be considered as an evolution of the former, both in terms of motor simplicity, and in terms of energy saving.

As the frescoes in the tomb of the officer Baqet III at Beni Hassan in Egypt, 3000 BC already assure us.



The easiest and most feasible approach to this complex sport is to first analyze the Athletes Couple system fixed in a static situation. For “Optimization Concept” this means still athletes and zero speed. (Uchi Komi's situation in the Dojo).

In Fixed Static Situation if Coaches analyze the Judo Physical Interaction, throws, take down,

Biomechanics makes it possible to Optimize (as Kano suggests) on the basis of minimizing energy expenditure.

If Coaches analyze the Judo throws classified into five groups (i.e., ashi-waza, koshi-waza, te-waza, ma-sutemi-waza, and yoko-sutemi-waza) by Kano and organized in Go Kyo the five lessons in the light of Biomechanics, they discover that they can be reorganized into two “classes”:

1. Lever Class; more expensive from an energy point of view

2. Couple Class ; less expensive from an energy point of view

Fig. Throws most used in the competition: Seoi (Lever), Uchi Mata (Couple)

The action of the throwing techniques passes through some specific phases: Unbalancing, Positioning and Throwing, or in the Japanese tradition (Kuzhushi, Tsukuri, Kake).

The first two phases can change during the competition, in general all the classic throws in judo, require that Tori executes, with his own body, at least one of the three types of trajectories to shorten the distance between the athletes (straight, internal rotation, external rotation)

Trajectories (straight, internal rotation, external rotation).

Trajectories that shorten the distances between the two athletes can be Optimized in light of the so called "Calculus of Variation" .

In this specific situation it is possible to apply the Euler / Fermat form of the Stationary Action principle. The Euler / Fermat principle reads:

The curve described by the Athlete's Body to shorten the distance between two points A, B is the curve (among all possible connecting paths A, B) that minimizes the momentum mv.

The Athlete travels between these two points along the shortest time course.

$$\partial S = \int_A^B mv\boldsymbol{ds} = m\int_A^B \boldsymbol{vds} = \boldsymbol{min}\,.$$

This form of principle, more understandable in terms of mechanical movement, will satisfy the optimization trajectories when shortening the distance between athletes. In this way the three short distance trajectories, called ***General Invariants of Action*** (GAI), will be reduced to a minimum and then the work done by the Athletes' Center of Mass will be minimal.

Lift

The lifting action is able to facilitate the throwing action by reducing the friction between the feet and the Tatami. Lifting is of great help both in the Torque techniques on the frontal plane and with inward rotation, practically useless for the Couple techniques with a straight approach (eg O Soto gari, etc.). However, lifting is energetically very expensive, because is against the gravitational force.

Almost plastic impact of extended soft bodies (human bodies)

All throws, after the shortening of the mutual distance, require a collision between the bodies of the athletes.

In the case of the couple group, both straight-line trajectory attack (O Soto Gari) and internal rotation attack (Harai Goshi, Uchi Mata), the greater surface contact collision depends on the chest having to apply the upper Couple force to the chest of the opponent, the second collision of a smaller area is the responsibility of the leg applying a lower Couple force to the opposing leg.

Therefore, in the case of a Couple, at the end of the previous trajectories, a simultaneous contact / collision occurs which can be considered almost plastic, because the two athletes are in close contact with each other.

UKE tends to rotate around its Center of Mass and the more the application of forces is simultaneous, the more the actual motion will approach the theoretical one.

The mechanics are obviously different from the application of the Lever tool.

In the case of the Lever tool UKE, subjected to the torque of TORI, (Seoi, Tai Otoshi, etc.) tends to rotate not around its Center of Mass, as in the Couple Group, but around the stopping point (fulcrum) while Uke's Center of Mass translates into space.

If Uke's Center of Mass moves in space, in the lever technique, unlike the one to which the Couple has been applied, this implies a greater work and therefore a greater energy expenditure on the part of Tori. Unlike the techniques of the Couple.

Flight path

In accordance with Kano's approach, the classic forms of judo throws, carefully chosen by Kano, are surprisingly Optimized: during their flight paths, after the application of the throwing tools (Couple or Lever) the body of UKE crosses the geodesics of two symmetries: cylindrical or spherical.

Geodesics are known to be the shortest paths between two points, on a specific curve, as result of Calculus of Variation. In the formulas in our metric space, considering the Cylinder and the Sphere as basic symmetry figures for TORI, the two minimizing geodesics satisfy the relationship of shortest travel time:

$dist(c(t_1), c(t_2)) = |t_1 - t_2|$ = minimum

This is the basic relation that satisfy the meaning and the properties of Geodesic Flight Paths.

Group of Couple

Basic simplest movements in symmetry planes

GROUP OF PHYSICAL LEVER

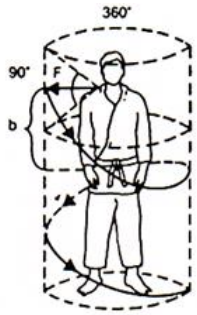
or

GROUP OF THE MOMENT OF FORCE

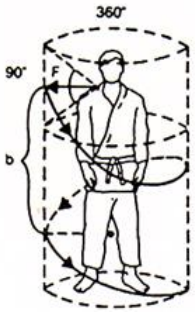
DYNAMICAL CONDITIONS

Flight path : Minimum and medium arm Helicoidal
Maximum arm Circular or Helicoidal

Symmetry : Minimum and medium arm Cylindrical
Maximum arm Spherical or Cylindrical

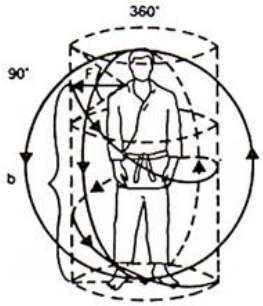


Minimum arm
Maximum applied force



Medium arm
Medium applied force

Fulcrum of physical lever



Maximum arm
Minimum applied force

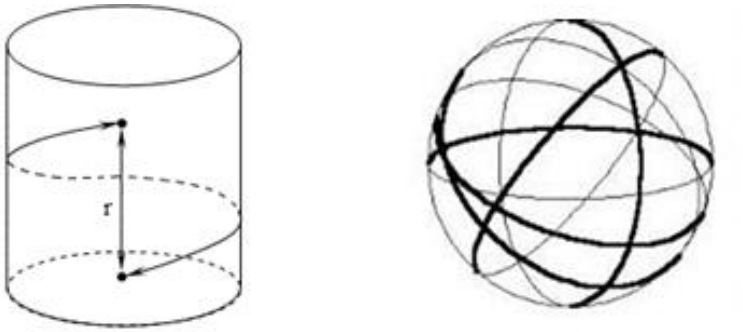


Fig. Geodesics of the symmetries of Projections of the Lever and Couaple groups

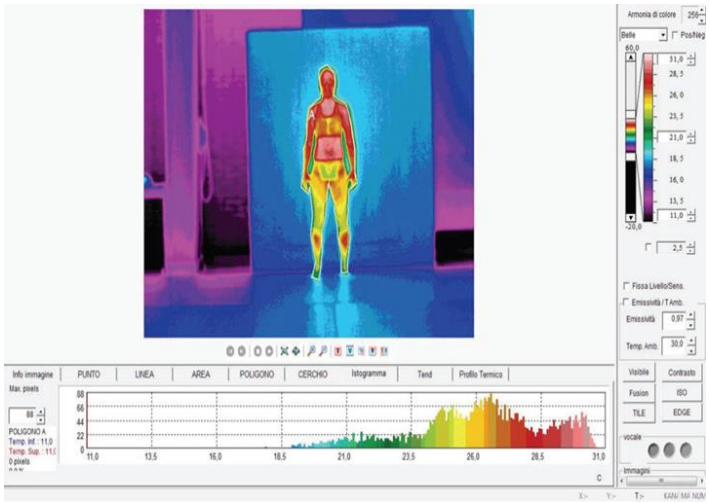
From the previous brief analysis it is possible to highlight and underline the following concepts:

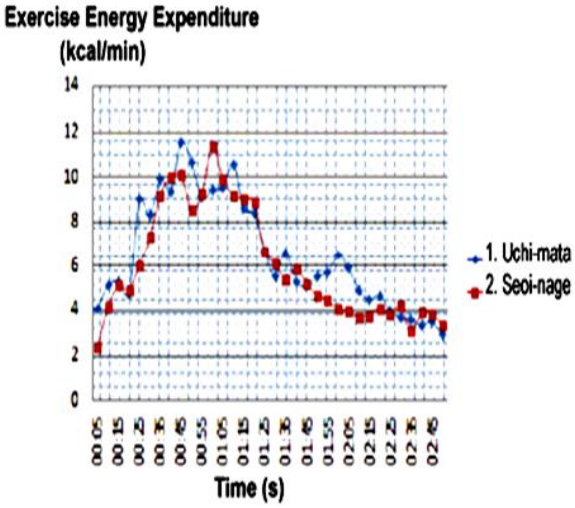
In the Couple group UKE's body, when launched, revolves around its Center of Mass. All Couple techniques are, in theory, gravity independent, less expensive and fully optimized.

In the Lever group, the Center of Mass of UKE's body, when launched, moves in space; all launches depend on gravity and friction, are energetically more expensive and not fully optimized.

However, Lever techniques can be optimized by varying, for example, the length of the lever arm, with the intention of obtaining Energy Minimization. Therefore, in the Biomechanical vision, going from Seoi standing [Ippon Seoi Nage], to Seoi kneeling [Seoi Otoshi], down to Drop Seoi [Suwari Seoi], is evidently only an Optimization process that decreases the energy spent by Tori to apply the same technique of the lever, albeit with the obvious opportune ways. While in the Japanese view, the previous Optimization of a throw is ignored and the three types of the same throw, three different throwing techniques are considered!

Physiological studies also confirm the previous statements relating to the greater energy consumption in applying Leverage techniques compared to those of the couple. In the following figures, some results of personal studies relating to the topic are shown.

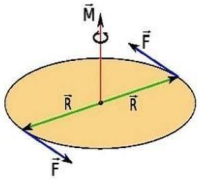




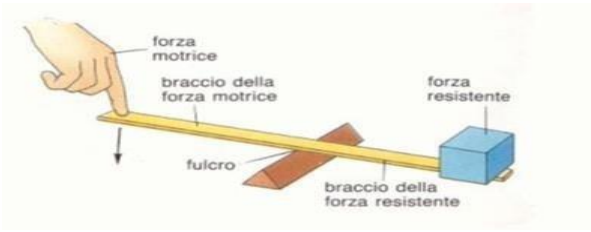
Group	Judo -techniques	K Joule
	Uchi Mata	4,2
COUPLE	**Ashi Arai**	3,6
	O Soto Gari	4,3
	Ippon Seoi Nage	**5,3**
LEVER	**Koshi Guruma**	**5,8**
	Tai Otoshi	**4,9**

Physics tells us that the "correct" system to analyze is the couple of athletes joined together through the grips; considering UKE as a rigid body, which is launched. There are only two physical mechanisms applied to "interaction" (throwing) between athletes:

1) Application of a Couple

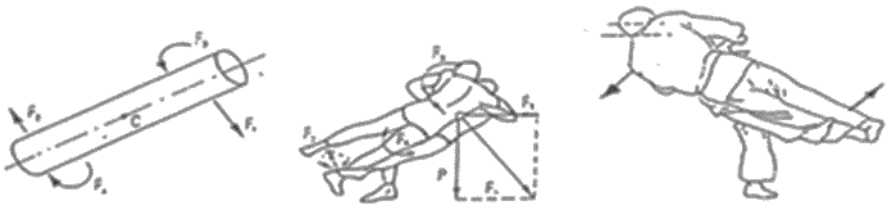


2) Application of a LEVER

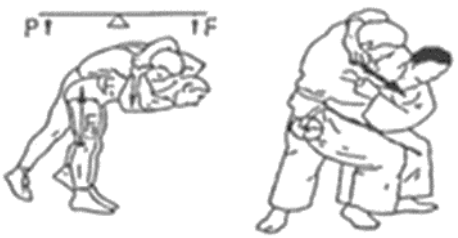


Therefore all judo techniques are based on only two physical principles:

1) **Application of a Couple of forces** (biomechanical model Sacripanti 1987) application of two forces that produce less energy expenditure.



2) **Application of a physical lever** (biomechanical model Sacripanti 1987) application of a single force that produces a greater expenditure of energy.



But biomechanics allows us to derive from the study of the means to project; Torque and Leverage, important (theoretical) information that can be useful in competition.

For the techniques of the Couple

- ***It is possible to perform Couple (torque) techniques without unbalance***
- ***In Theory all the techniques of the Couple are independent of the Kuzushi***
- ***They have a simpler movement - metabolically less expensive***
- ***Timing is important for TORI***

Timing

For the techniques of Lever

- ***It is not possible to perform Lever techniques without unbalance***
- ***All the techniques of the Lever are dependent on the Kuzushi***
- ***They require the opponent to be stopped for a moment***
- ***Have more complex movements - metabolically more expensive***
- ***Coordination is essential for TORI***

Coordination

So, summarizing the discourse started with the research of the Archetype of the principle of using forces, without the classic judo grips.

It can be said that both from a motor point of view and from an energetic point of view the Couple techniques can be seen in terms of Optimization as the evolution of the more natural and less optimized lever techniques, both from the point of view of movements, conceptually and biomechanically simpler in the Couple, both from the point of view of the energy expended (lower in the Couple).

Now returning to Gensoku no Genkei to these ten highly stylized general representations on the use of forces, without classic judo holds.

Biomechanics leads us to apply, as already mentioned, the two principles that regulate all throwing techniques, that is any judo technique, which in formula are represented by the same equation, because their final effect is the same. Producing a rotation of the body by a vector called Torque:

in the case of the Lever around the stopping point (fulcrum): $\tau = F \Lambda r = Fr \sin\phi$

in the case of the Couple around the center of mass: $\tau = F \Lambda r = Fr \sin\phi$

And this is precisely the purpose of this technical cultural text, which considering the basic form of the archetype of the principle of forces, in its open form, wants to encourage the self-expression and creativity of the judo practitioner, so that the lesson monotonous in which the same notion is always repeated is replaced by a dynamically open learning that will allow the practitioner to express himself in his widest creativity and in perfect technical-cultural freedom.

Fragile subjects with specific attention to Safety and Wellness

Notes on the educational structure and methods for the elderly (over 70) and children in performing Gensoku no Genkei (原則 の 原型).

In the ideal location in a logical-educational facility for both children and the elderly, always with a view to Safety and Wellness.

Where about safety we denote a structure adapted to prevent injury or damage.

Normally the approach to the human body of elderly must follow two basic and methodological way Impairment and Motor learning that means : Strengthens and/or Optimize, when necessary.

Impairment Based Program
"Build a Bigger Engine"
In an ENGINE: need to increase displacement in all cylinders and accommodate more gas to be burned during each revolution of the engine
• Increase # cylinders (V6 vs. V8)
• Make cylinders bigger
• Increase compression ratio
"Run with More Horsepower"
In a PERSON: increase capacity of musculoskeletal and cardiopulmonary systems
• Increase muscle strength and power
• Increase joint range of motion
• Enhance delivery and extraction of oxygen
"Maximum Performance"
Motor Learning Program
"Build a Better Engine"
In an ENGINE: clean air and gas need to be driven to car's cylinders for combustion when needed
• Tune-up system components (spark plugs, air filters, hoses, belts, etc)
• Check timing controls
• Optimize idling ratio
"Run More Efficiently"
In a PERSON: integrate movement and postures, improve efficiency
• Re-align biomechanical and neuromotor control
• Improve motor skill
• Strengthen motor programs
• Improve feedback for adjusting movements
"Optimal Performance"

Adapted from [25]

And about the wellness we indicate a structure that allows a psycho-physical state of full health, to which must be added a global well-being in the Dojo, which overall denotes a happy and serene quality of training.

For example by means of a nine-level structure organized on these movement principles:

1) stretching
2) basic gymnastics
3) the fundamentals of position and movement (Shisei, Ayumi and Tsughi Ashi, and Tai Sabaki)
4) Ukemi
5) Gensoku No Genkei (gentle or safe form) as archetype of the use of forces on and by elderly opponent
6) Kumi Kata
7) fundamentals of position and movement in pairs
8) Study of throwing movements alone Tandoku Renshu
9) beginning of the study of projection techniques with kata like exercises.

We relate differences in the exercise programs to differences in building a body engine for maximum versus optimal performance. The impairment-based program results in greater physiological capacity in body systems that can be used for walking, falling, throwing (i.e. maximum performance). The motor learning program results in a more efficient use of physiological capacity in body systems for walking, falling, throwing (i.e. optimal performance).
In the next table from [25] we will see some indicative exercises in clear way connected to the two way to improve elderly people body.

Components of impairment-based and task oriented motor learning interventions.

Impairment-based Intervention: Build a "Bigger Engine"		
Component	**Purpose**	**Sample exercise**
Resistance exercise	Improve strength and power of weak lower extremity muscles used in walking.	Repeated chair stand
Stretching	Increase joint range of motion to attain specific postures of the limb during walking	Stretching of the dorsi-flexors
Aerobic conditioning	Enhance the delivery and extraction of oxygen to the muscles used in walking	Cycling on a stationary bike
Progressive ambulation training	Practice components of walking to facilitate ability to recognize incorrect actions so that they can be consciously corrected	Repeated practice of push-off or weight shifting of the center of mass
Task Oriented Motor Learning: Build a "Better Engine"		
Component	**Purpose**	**Sample exercise**
Defined movement goal	Limits degrees of freedom and reduces conscious attention	Stepping patterns such as stepping forward and across. Walking to set speed using music or metronome
Movement to gain knowledge of muscles and postures	Facilitate smooth switching between agonists and antagonist muscle groups during gait	Stepping backward and across prior to stepping forward.
Practice to correct errors in movement, develop and adjust motor plans	Accurate practice to facilitate changes or skill acquisition	Treadmill walking
Challenge to select optimal motor plan	Challenges accuracy and amplitude to facilitate motor skill acquisition. Sets criterion for performance.	Varying selection of motor plan during walking such as changing the direction of walking an oval path or spiral

Before addressing the modalities in the adapted execution of Gensoku no Genkei for children and the elderly, topics that will be treated jointly with the respective educational structures, it is important to make a clarification on the falls present in Gensoku no Genkei. Precisely because of their essentiality, it should be noted, that falls in it are not at all easy and anything but sweet.

Therefore, on the basis of the declared principles of Safety and Welness, we will have to rethink more suitable methods of execution, using appropriate preparatory-educational, in similar way to that already done in falls teaching.

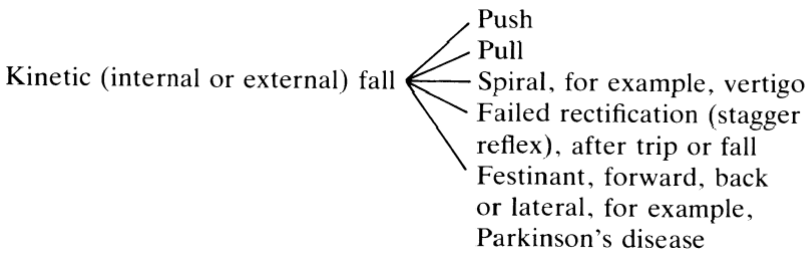
Before mentioning the necessary adaptations of the method of execution, we would like to focus a little more on falls (a fundamental Safety tool) introduced by Kano Sensei at the foundation of Judo.

In the practice of judo, the theoretical and practical study of how to absorb the impact of one's body with the ground in order to avoid physical damage is of great interest.

Falls in elderly individuals

Classic description of falls as “accidental,” “extrinsic,” or “mechanical,” which imply that they are due to unavoidable external environmental hazards or stressors; in modern time is changed in more practical and evaluable way, considering the pathological conditions intrinsic to the faller. In fact, falls are often due to the dynamic interaction of “intrinsic” and “extrinsic” factors, which makes it difficult for the faller to adapt to environmental challenges. Therefore, interventions must focus not only on changing the environment, but also on improving the adaptive capacity of the older individual.
Elderly individuals among the population of 65 years or over have a high tendency to fall due to either intrinsic or extrinsic factors.

How Elderly Fall


Kinetic (internal or external) fall
Push
Pull
Spiral, for example, vertigo
Failed rectification (stagger reflex), after trip or fall
Festinant, forward, back or lateral, for example, Parkinson's disease

Falling in elderlies is a very common cause of injuries that increase the rate of mortality and significantly decrease quality of life. There are many predisposing factors that may lead to falls.
The falling Biomechanics, for slipping during walking, show us that using a simple biomechanical model (involving consideration of mechanical forces at the moment the foot strikes the ground), Tisserand (1985) suggested that slipping velocity (v_{fs}) is a function of the difference between the static (Fs) and kinetic (F_k) friction forces:

$$v_{fs} = \frac{1}{M}(F_s - F_k)t$$

where M is the mass of the body parts in motion and t is time.
Tisserand concluded that for a given coefficient of kinetic friction the seriousness of a fall would be directly proportional to the coefficient of static friction.
Strandberg and Lanshammar (1981) estimated that the critical sliding velocity leading to falling after a heel slip was around 0.5 ms−1, and that the required minimum kinetic friction coefficient was about 0.2 during normal level walking.
On the basis of experimental analysis of workers falling, then the boundary slip distance s between an avoidable and unavoidable fall is approximately 60 mm (Grönqvist et al. 2001d) because:

$$s = \frac{v_{fs}^2}{2g\mu}$$

This equation, where g is the acceleration of gravity (1g= 9.81 ms−2), v_{fs} is velocity of sliding, and μ is the coefficient of friction, give us the amount of slip distance.

Understanding and evaluating risk factors can help to decrease or even prevent falls.
The most common mechanism of fall in elderly was found to be not very clear causes (28.3%, n = 79) followed by forward fall (19.4%, n = 54), right side fall (19%, n = 53), left side fall (15.8%, n = 44), backward fall (13.6%, n = 38), and unknown mechanism (3.9%, n = 11). Most common place of fall was found to be home (82.2%, n = 231), followed by outdoor (8.6%, n = 24), hospital (6.1%, n = 6.1), and unknown place (2.5%, n = 7).

There was no significant association between risk factors and the mechanism of fall or place of fall.
It is interesting to note that forward and right falls have the same probability to occur 19%- 20%, more or less the same is true also for left side and backward falls 14%-16% and the most dangerous site for falling is home 82%.

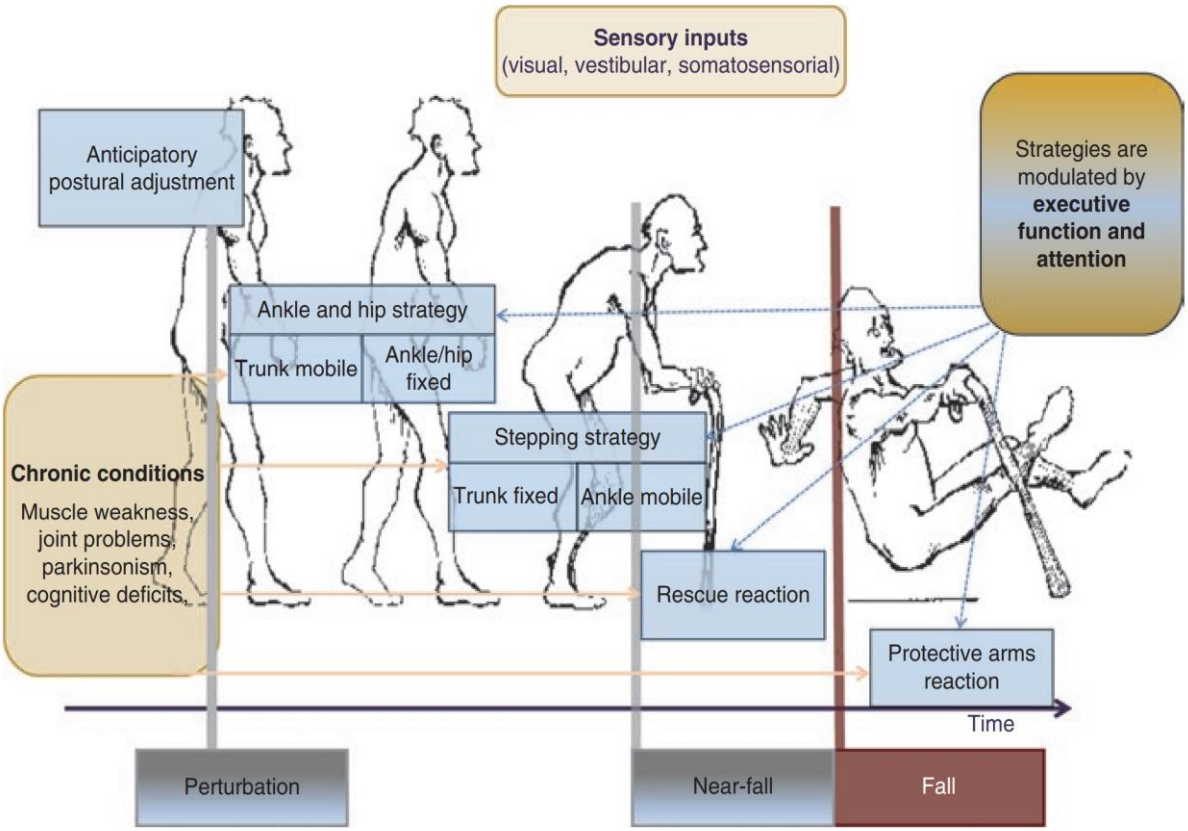


Fig . ***How cognitive processes modulate Strategies aimed at preserving postural body stability after a single perturbation. From (34)***

The book "Falls and Cognition in older persons" provides for exemplum also informative review of promising, innovative interventions to prevent falls that are based on recent discoveries of brain structures and functions that control mobility. These include physical, cognitive, and combined exercise programs; virtual reality training; pharmacologic agents; and noninvasive electrical and magnetic brain stimulation.
Obviously, this booklet is focalized only on the specific physical exercises that we can found in the Judo structure.
The last attempt to improve and prevent the risk of falling in elderly underlines very clear that not only the physical capabilities must be improved but also the cognitive one's to obtain a very important improvement in prevention of falling.
For exemplum it is well known that educed executive functions may also increase falls risk via decreased judgment and diminished self-regulation, or indirectly increase falls risk via secondary disruptions in executive-related behavior, such as a loss in motivation and initiation. Impaired balance and gait and loss of motivation and initiation may also lead to further reductions in executive functions (i.e., feedback loop).
Notably, targeted exercise training reduces falls risk in older adults by maintaining or promoting executive functions. Evidence from randomized controlled trials supports that exercise may reduce falls by improved executive functions. A proof-of-concept randomized controlled trial provided evidence to suggest that the Otago exercises program significantly reduced falls by 47% among older adults aged 70 years and older who sought medical attention due to a fall. In the absence of significant improvement in physical function (i.e., balance and muscle strength) .

The Gensoku proposed as complex exercise, more than Otago could be more useful to increase fall prevention, and moreover, if proposed in an appropriate manner, it could be also a cognitive stimulus that increases personal CREATIVITY (putting situations to be solved with the use of archetypes and letting the practitioner find the solution).
The adaptation of itsutsu in gentle and safe form, is a clear exempla of this idea of free creativity.
This aspect of judo is given by the study of Ukemi (fall control) to treat the body without risk. Kano Shihan in his synthesis on Ukemi, kept in mind in their setting two primary needs, which have allowed judo to become a modern sport, capable of evolving over time.

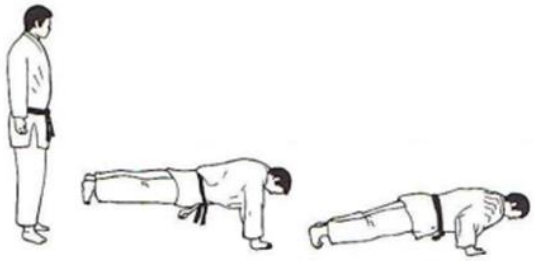
1. That they were useful to avoid accidents or injuries to the practitioner who is projected during a lesson or competition.

2. That they were founded on solid scientific foundations.

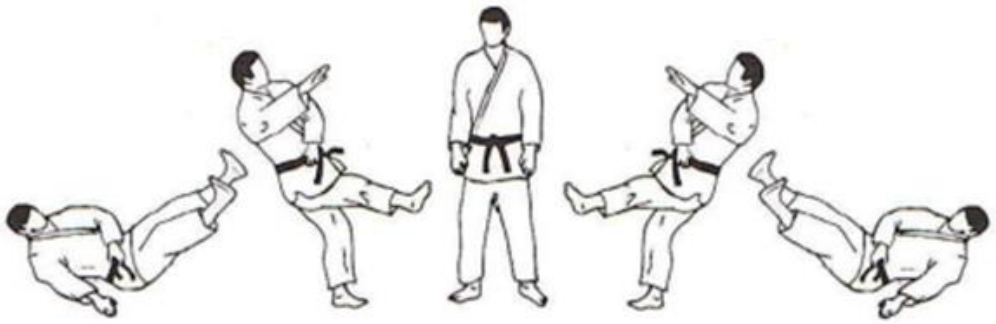
The analysis and practice of the Ukemi shows not only that they fulfill the primary purpose of Safety, for which they were developed by Kano Sensei; but which are also an important aid for the practitioner in a broader and more general sense. In fact, their learning and their continuous practice means that:

a) The practitioner learns to achieve a state of physical relaxation, which consequently produces a loose and harmonious posture.
b) The practitioner learns to overcome the natural psychological reluctance towards falls.
c) The practitioner learns not to create joint angles that are dangerous for his own safety.
d) The practitioner learns to automatically coordinate, in a few fractions of a second, the appropriate movements.
e) The practitioner learns to acquire a better spatial orientation during the conscious phase of flight.
f) In Kodokan teaching practice, fall control is taken into consideration according to four fundamental directions.

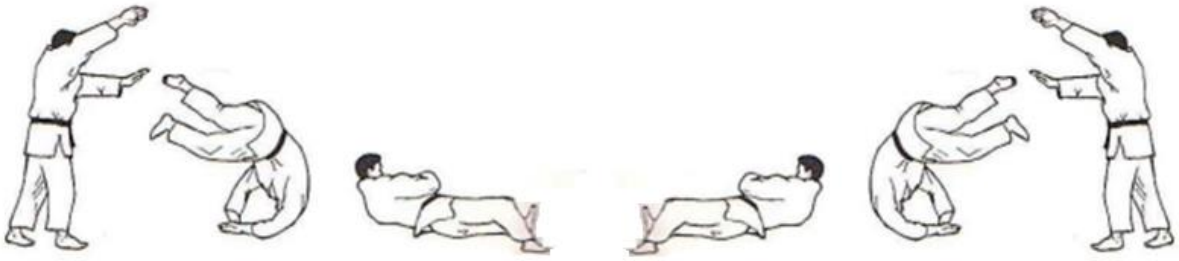
Ushiro Ukemi - Control of the backward fall



Mae Ukemi - Forward fall control



Yoko Ukemi - Right (Migi) or left (Hidari) side fall control



Mae mawari Ukemi (or Zempo kaiten Ukemi)
Fall control rolled forward to the right (Migi) or to the left (Hidari)

To ensure that each class of practitioners can have the widest experience in performing Gensoku no Genkei we will have to use the following precautions:

1) The execution of Gensoku No Genkei will be more or less fast depending on the class and the preparation achieved

2) The execution of each individual shape, while maintaining their basic principles, must be performed by Tori with the appropriate speed to allow Uke a soft and safe fall

3) Uke's falls will be performed with the appropriate speed, according to the most suitable and safest educational trainers with respect to the movement.

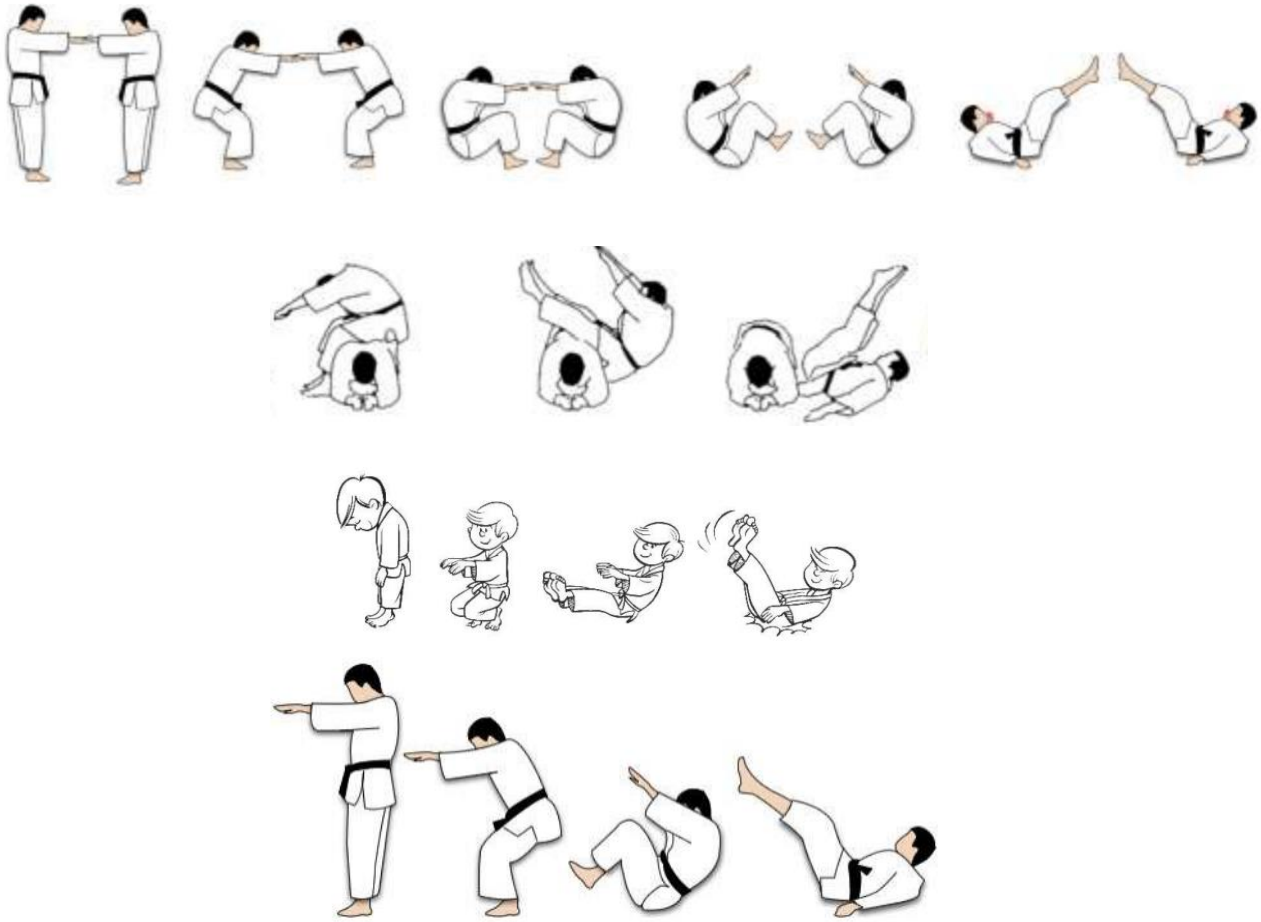
4) Some techniques of Gensoku No Genkei may be suitably adapted or varied according to the class and preparation of the practitioners, with a view to safety and wellness, while respecting their didactic principle.

5) The teacher in choosing the couple must take into account the level of mutual preparation, which will be followed by due execution.

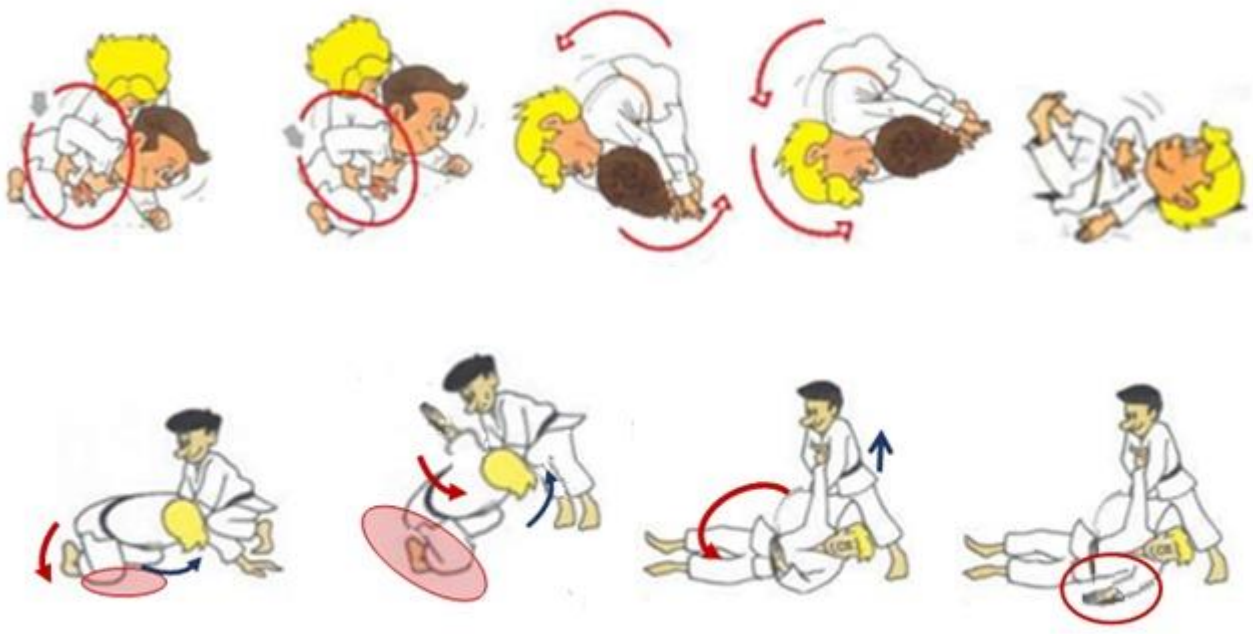
Operating on the basis of the aforementioned principles, all classes, after learning way to fall safely, will be able to practice Gensoku no Genkei obtaining the maximum educational benefits.

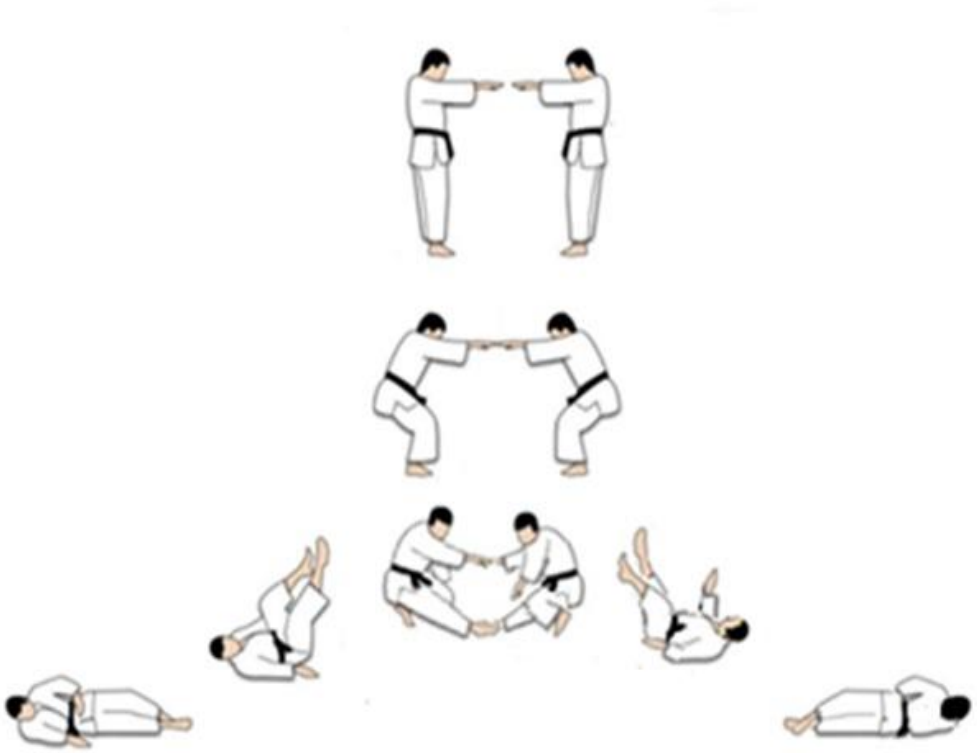
In the case of the Ukemi,(the way to fall safely) the strong point of safety, the educational programs proposed for their soft execution are showed in the following figures:

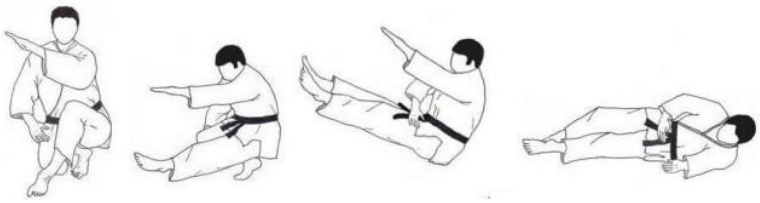
Alternative for Ushiro Ukemi

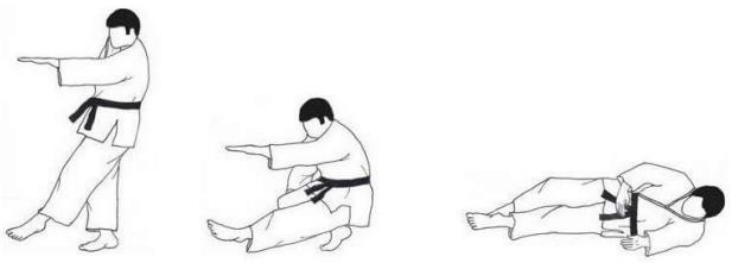


Educational and Alternatives for Yoko Ukemi

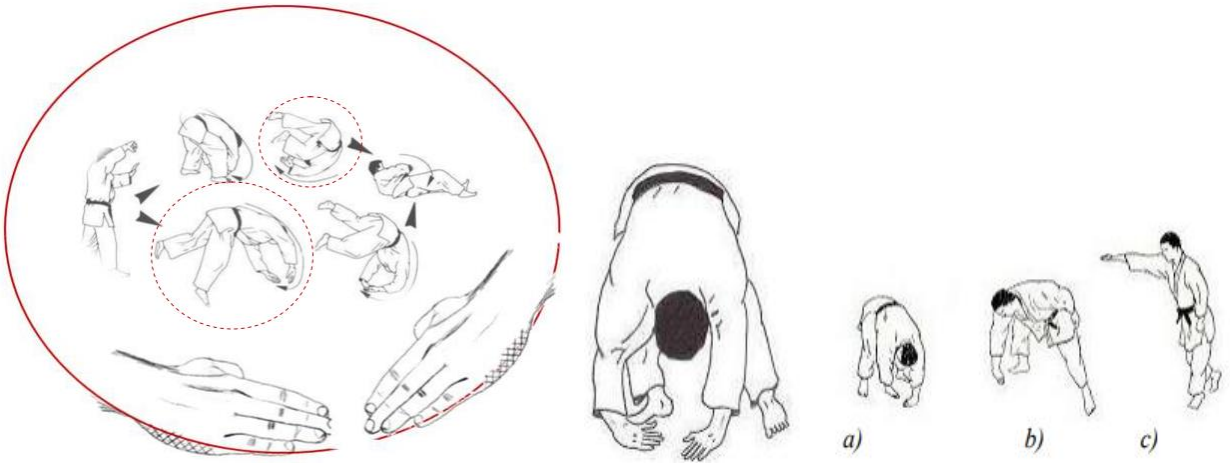




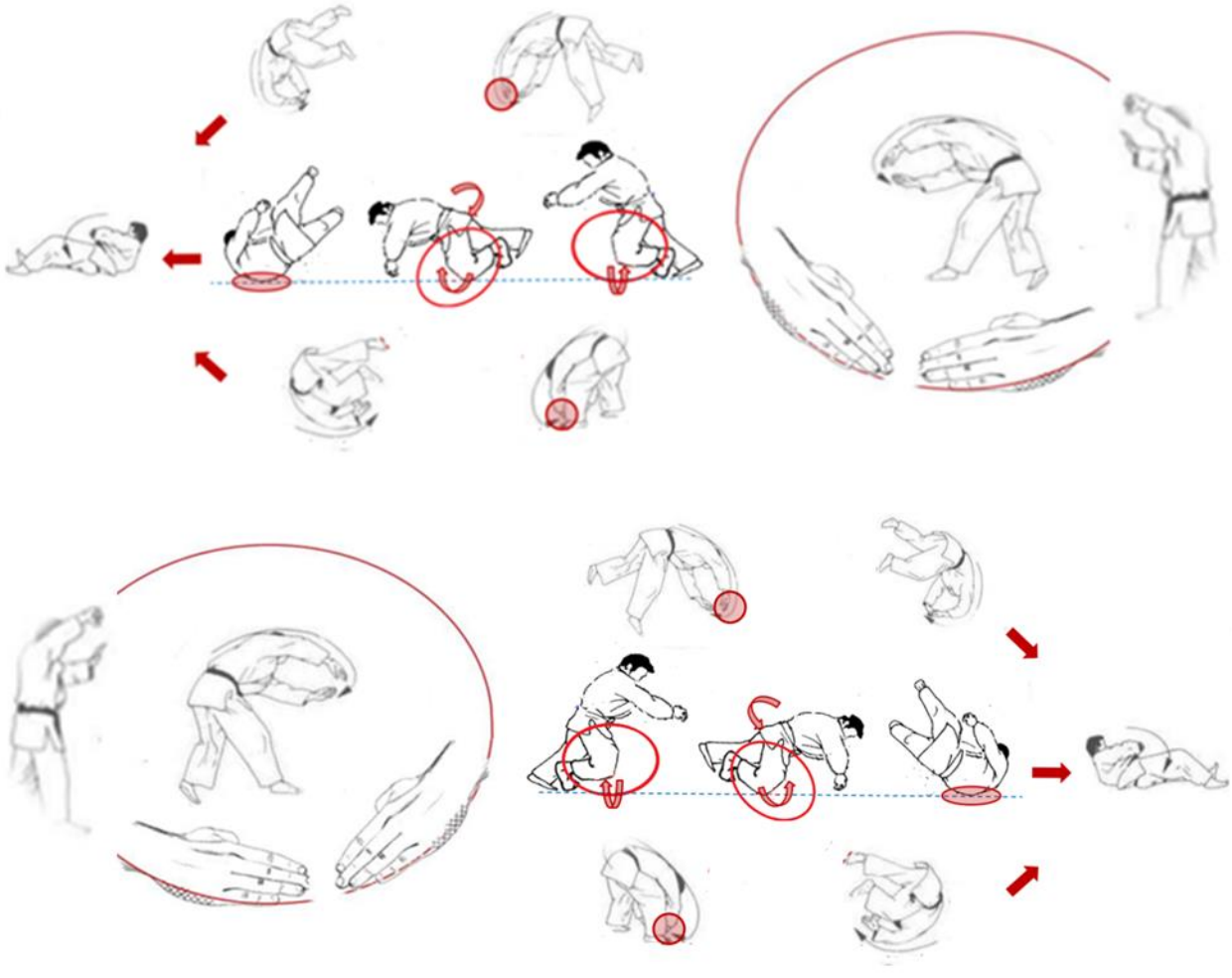




Educational Alternative
for Mae mawari Ukemi o (Zempo kaiten Ukemi)



Three different starting positions: a) Two hands on the ground b) One hand on the ground c) Arm forward



The first two steps into the Do

We can speak about the meaning of Do in judo, for long time, but the most important thing is not to talk about, but to pass through the Do.
Obviously it's a job for a lifetime, but the best thing to do is get started and enter the Do, as surely as Kano Sensei teaches us: Ji Ta Kyo Ei and Seryoku Zen'yo.
What is the meaning and practical application of these two passages?

We give the floor to Kano Shihan himself:

> The study of the application of judo eventually led to the teaching of seiryoku zenyo, which is the underlying principle of serious competition. I demonstrated in these pages that this principle can be applied to everyday life. As regards the our daily activities and social interaction, teaching Seiryoku Zenyo means obtaining the maximum result through the use of all types of energy. For this reason, human faults like the anger, for example, violate this principle. Getting angry consumes mental energy.
>
> How anger is it good for you or anyone else? The results of anger are invariably a depletion of energy mental and being despised or unwelcome by others. Following the principle of Seiryoku Zenyo, people they will not be able to get angry.
>
> Being disappointed or upset by failures or setbacks, or harboring resentments are also ways in which mental energy is consumed. Arguments, quarrels - all these things are violations of the Seiryoku Zenyo. Those who practice judo must pay close attention to following this teaching. Do not matter what the situation is, there is only one path that people must follow: in each case, the only one course is to consider what is the right thing to do and to proceed in that direction.
>
> I coined a phrase that I regularly say to people: jinsei no koro wa tada itsu aru , names (there is only one path in life). Conducting yourself according to this principle on a daily basis is of vital importance. Although humans can reach the pinnacle of success, there is only one path towards which proceed. That is to say, since complacency gives rise to the causes of failure, you always have to consider things carefully until you find the most appropriate course of action and proceed with that way.
>
> Even when you fail, there is only one path to proceed along. Even if once you fail and you lose heart, if you regain the courage and find your way along the highest path, the circumstances they will gradually improve. As they find their own way, those who practice judo and follow the principle of Seiryoku Zenyo always have a calm spirit, enjoy life and are resourceful.
>
> The most advanced human spiritual life can only be achieved when people absorb this principle completely. [1] (27)

Applying the principle of Ji ta kyo ei may therefore seem simple, in theory, but only in theory, because it is necessary be careful not to fall into the excesses of "I help you and you prosper" or "you help me and I prosper". The notion mutuality is essential and must be the object of all attention. This teamwork must take place in an atmosphere of friendship and solidarity.

To concretely illustrate this principle, imagine two judokas practicing their favorite sport.

Tori (the one who attacks) does so without paying attention to Uke (the one who is attacked). Tori only thinks of himself, himself and his technique. Uke, less experienced, falls and gets hurt. The most obvious consequence is that Tori will quickly find no one to work with, as he will have a bad reputation. Tori won't be able to progress further, instead when working with a less experienced partner, Tori could have given advice and could have learned from his partner himself.

We leave the conclusion of these words simple and the explanation to Kano Jigoro Shihan:

> "Looking at the ways of the world, we discover that all things large and small are interrelated in this way. If you act in your own interests by refusing to recognizing the needs of others, this will lead to mutual destruction and nothing is more disadvantageous or calamitous for the society of this situation.
>
> We should cease the meaningless conflict and stick to the principle instead by Jita-Kyoei. I believe that if we follow the Jita-Kyoei ideal, international relations will become more friendly and will promote the well-being of the entire human race. For this reason, please all of you to integrate and embrace all these teachings and proclamations, raise the banner of Seiryoku-Zenyo and Ji ta kyo ei, notions that are based on the immovable principles of truth, and move forward together with all the people of the world. [2] (28)

GENSOKO NO GENKEI

Alternative Forms: Gentle and Safe

(Basic tool for children and elderly)

With a view to safety, well-being and serene training, two alternative forms of *Isutsu no Kata* were developed. The first alternative as a gentle form and the second alternative as a safe form. Each alternative similar to what is done in *Gensoku no Genkei* but with different purposes, is described.

The alternative forms represent "*Ji-Ta-Kyo-Ei*" where *Tori* learns how to use the various forms of force through experimentation by attacking *Uke* while at the same time assisting *Uke* in falling. *Tori'*s assistance helps *Uke* build confidence as *Uke* learns the falls and gives *Uke* the opportunity to become aware of the forces applied by *Tori*.

Both *Tori* and *Uke* increase their knowledge and learn to trust each other; over time they both increase their desire and technical abilities.

The gentle and the safe forms of training--dedicated to the elderly--are based on the two founding philosophical principles of Judo: *Ji ta kyo ei* and *Seirioku Zenhyo*.

Mutual friendship and prosperity, which are exemplified in the first five techniques, allow Tori to learn the use of force on *Uke*, while at the same time providing *Uke* with the necessary support for the safety of *Uke*'s falls.

The best use of energy is used in the second five movements in which *Tori* uses *Uke*'s own strength to throw him while he controls *Uke*'s fall to safeguard *Uke*'s safety. We could say that these two series of technical movements are for beginners of any age--*Tori* and *Uke*'s first two steps in their technical and moral path of *Ju Do* (the way).

An attempt was made to save, as far as possible, the technical message contained in the *Itsutsu* without distorting too much of the physical meaning of technical movements, eliminating movements that are potentially dangerous for the older and younger beginners and replacing them with simpler movements that emphasize the spirit of each other's collaboration in the roles already indicated above.

Considering *Isutsu no Kata* an open form of *kata* as Kano Shihan showed us; not forced by rigid interpretations in the closed expressions of exasperated repetitiveness, but as expressive opportunities and creativity. These movements have stimulated even more the search for mutual security and mutual collaboration.

Gensoku no Genkei does not want to be a *kata* but an example of representation of the archetypes identified, on which to base an all-round growth path, for all situations that may arise.

It is based on the simplest possible basic movements that allow *judoka* to develop the principle of an action of Judo. We are provided with three versions (i.e., safe, gentle, and advanced) that are useful, flexible and applicable to various levels of strength / condition / physical capability and study needs.

The versatility and ease of execution represent a didactic tool available to teachers and a stimulus and a pleasant challenge for researchers.

Versatility and ease do not take away from the great potential inherent in *Gensoku no Genkei* as a tool for building something useful for both the judo world and beginners. The comparative representation of the three versions follows so the reader may have a better understanding of their differences.

The Gentle Form

We use the gentle form for people who. although advanced in age, are still in good form with joints good enough to be able to bend on the knees without the slightest difficulty.

For people unable to perform deep knee bends the Safe Form exist, in which these actions are totally banned.

The Safe Form

It is important in the safe form for elderly or children to be able to perform the techniques at a very low speed of execution and the use of Kokyū (呼吸)--the well-known practice of Japanese breathing connected to Ki. However, for the elderly speed will be much more pragmatically used for the scanning of times and the regulation of attacks and falls.

Remember the safe form of *Itsutsu* strictly underlines the *Ji Ta Kyo Ei* concept. With two exceptions *Tori* applies the same movements of Itsutsu. The two exceptions are in *Sanbon me* and *Gohon me* where *Tori*'s uses a fist closure of the hand or the active or support arm, depending on the techniques, as a clear signal that help is available for *Uke*.

Uke will be able to use *Tori*'s appropriate support to learn and safely perform the expected fall, for his part *Tori* is still able to learn and practice the use of force in a given direct attack, while taking charge of providing the correct safety support to his partner / opponent in the full fulfillment of *Ji Ta Kyo Ei.*

The Advanced Form

The previous underlined helping actions do not take place in the Advanced form because *Tori* uses *Uke*'s attack according to the principle of *Seryoku Zen'yo* and the part of supporting *Uke*, according to the spirit of *Ji Ta Kyo Ei,* is resolved through the use of the classic control of Judo: holding back an arm of *Uke* thus facilitating *Uke*'s fall, decreasing the impact force.

Advanced athletes should be able to perform all of the simple movements in the advanced *Gensoku no Genkei*. The Advanced Form requires continuous movements at high speed with control of *Uke*; however, *Uke* is required to perform *ukemi* unassisted.

Summarizing:

Gensoku No Genkei, in its gentle and safe forms, consists of the simplest possible set of movements, grouped in an open form (形), according to the vision of Jigoro Kano Sensei, used to train and understand the basic use of forces and facilitated falls. .

Its execution by the elderly, and potentially also children, must necessarily follow the rule of "no rules".

This means that, in its linear execution, each performer will be able to have his own pace of locomotion, his own speed of execution of the movements, and his own form of facilitated fall.

This is the safest condition for both performers

In Japanese there is no form for the plural so *kanji* itself can be plural or singular depending on the context of the sentence.

We can now affirm that the choice of the title *Gensoku no Genkei* happily applies to both gentle and safe forms with the specific meaning previously described.

I) *Gensoku no Genkei* (原則の原型)
The Archetype of principle of forces use.

(Advanced Form)

Itsutsu No Kata **(五の形) plus *Genzoku No Kata* (原則の形)**

II) *Gensoku No Genkei* (原則の原型)

The Archetypes of principles (of safety and of forces use)

(The Gentle Form)

Itsutsu No Kata **(五の形) plus *Genzoku No Kata* (原則の形) both modified.**

III) *Gensoku No Genkei* (原則の原型)
The Archetypes of principles (of safety and of forces use)

(The Safe Form)

Itsutsu No Kata (五の形) gentle form modified plus *Genzoku No Kata* (原則の形) modified as in gentle form.

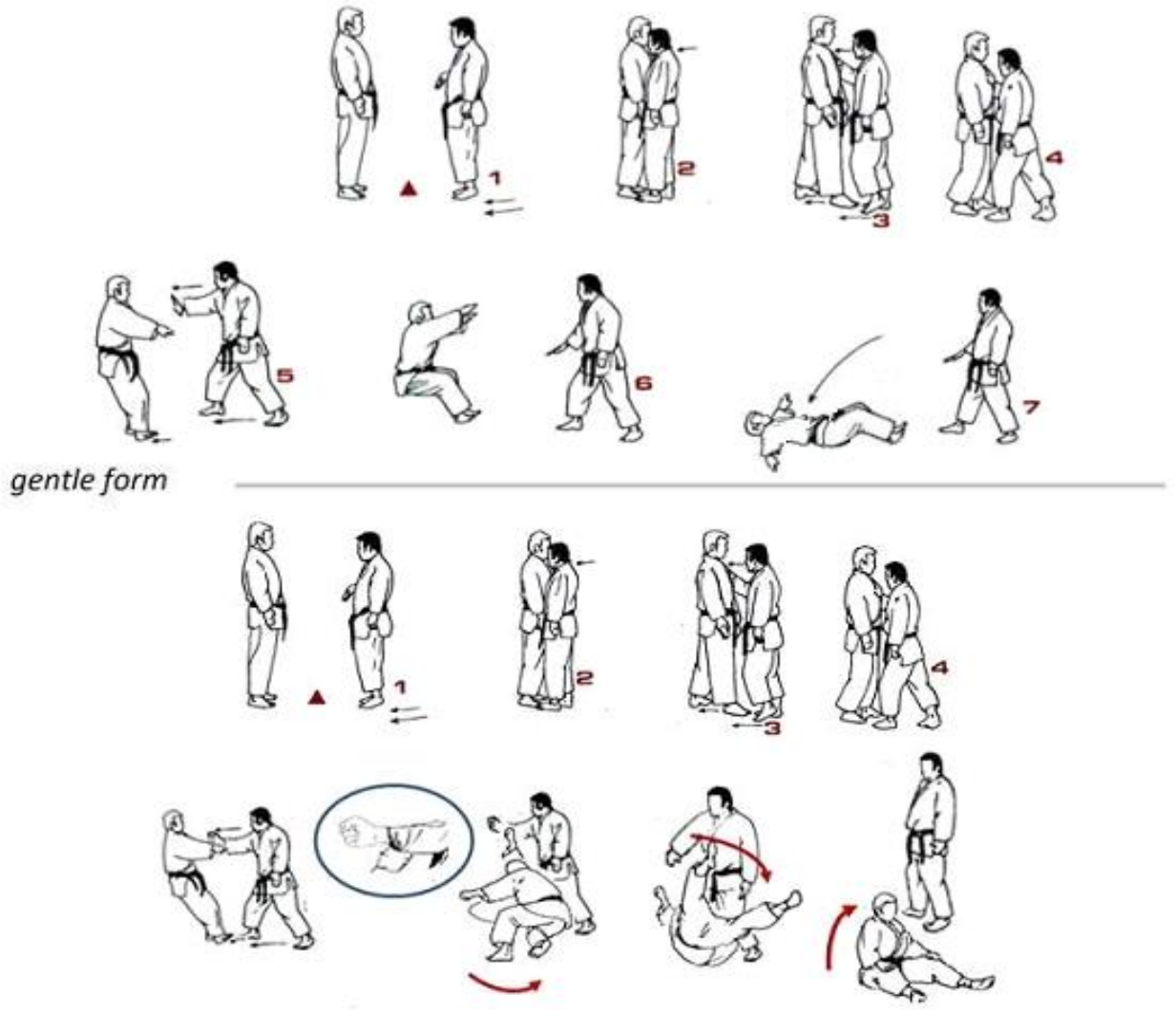
Itsutsu-no-Kata

Form	Name	Advanced[1] (pages)	Gentle (page)	Safe (page)
1	*Ippon me*	20/50	50	
2	*Nihon me*	20/53	53	
3	*Sanbon me*	21/57	58	73-75
4	*Yonhon me*	21/61	62	
5	*Gohon me*	22/65	65	76-77
Gensoku no Genkei extension				
6	*Rappon-me*	21/68	68	
7	*Nanahon-me*	22/69	69	
8	*Happon-me*	22/70	70	
9	*Kyuuhon-me*	23/71	71	
10	*Juppon-me*	23/72	72	

[1] The traditional *Itsutsu-no-Kata* forms are the first five techniques demonstrated in the *Gensoku No Genkei*

Itsutsu No Kata（五の形）

Ippon me **Traditional (advanced) form**



The initial action is identical to the form previously presented;

Ippon me in the gentle form differs from the traditional (advanced) form because, in the moment of the projection when pushed Uke comes backwards (unable to do his standing position) Tori takes a small step forward with his right foot and, instead of pushing Uke backwards, he closes his right fist (signal of terminated action) [Image 1] thus seeking him for support to carry out the fall.

[Image 1]

Uke with his right hand takes the right sleeve of Tori's Judogi or finds support on his right wrist [Image 2] difference between Ippon me in Itsutsu no kata in the traditional (advanced) form and Ippon me in the gentile form

1-2(A)

The palm of Tori's right hand that was placed on uke's breast **vigorously shoves** uke to uke's rear with the goal of throwing uke so uke falls unassisted (1-A). Uke finishes the falling action and performs Ushiro Ukemi in the form of jizo daore.(2-A)

Instead of a vigorous shove by tori, the palm of tori's right hand lightly pushes uke to uke's rear--with the goal of demonstrating the off-balancing of uke--, then during (or after) the light push tori closes tori's right hand into a clinched fist*. As uke is starting to fall backwards, uke reaches out with uke's right hand and holds onto tori's left sleeve end or tori's wrist. (see figure 5B) The actual grip is uke's choice.

ALTERNATIVE: Instead of a light push, tori may choose to only close his right hand into a fist with the minimal off-balancing if tori feels that uke's balance is already sufficiently disturbed.

* The closing of the fingers of tori's right hand into a clinched fist is tori's signal that tori is finished with the kuzushi and the kake action.

1-10 (B)

Uke bends down onto uke’s right knee, then rolls around that knee onto and across uke’s buttock to perform ukemi on uke’s left side, slapping the tatami in the form of a rolling left back side fall (see figure 6B)

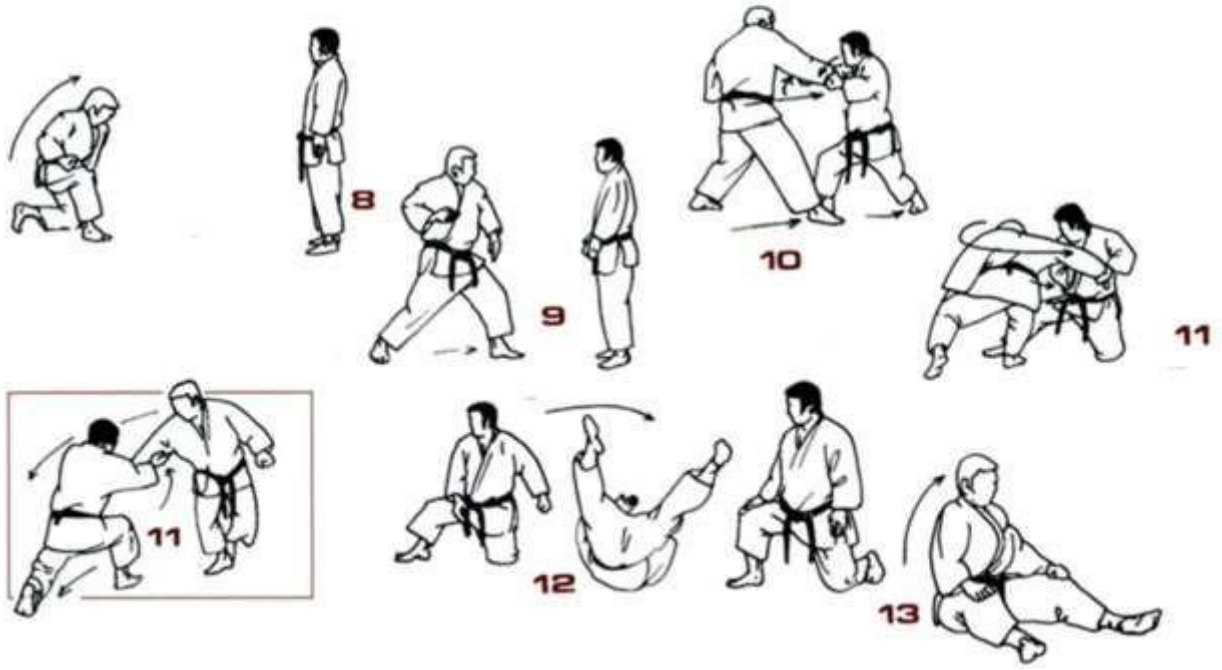
Although tori will remain standing, tori may lower tori’s body as needed to provide the necessary counterforce to reduce the impact of the fall.

At the end of the rolling ukemi, uke sits back up on uke’s buttock with uke’s legs stretched forward and outwards. (see figure 7B)

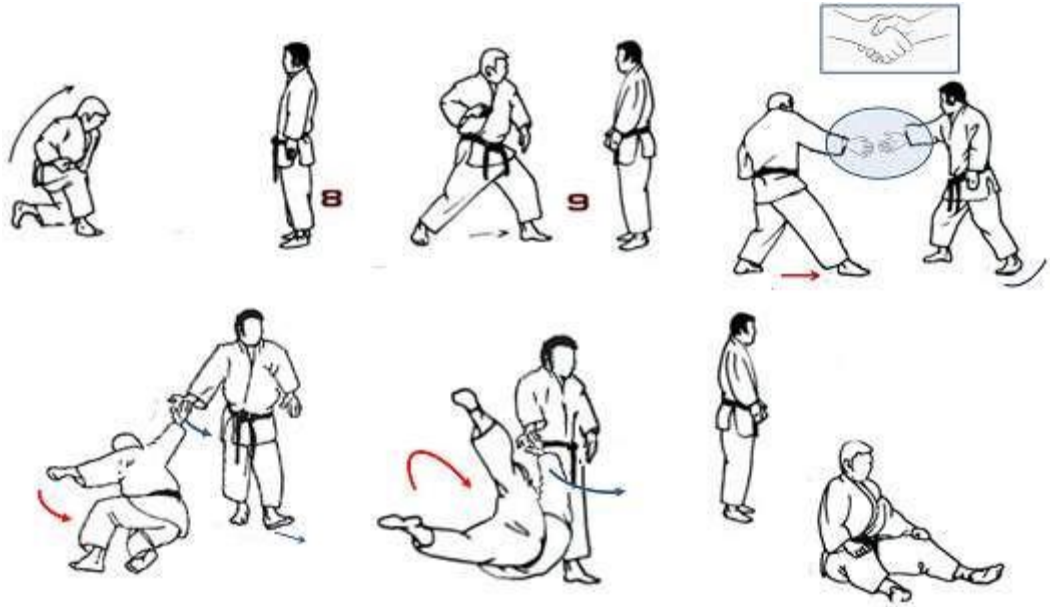
Uke with his right hand takes the right sleeve of Tori's Judogi or finds support on his right wrist and makes the fall by rolling first on the right knee then on the back until beating with the left hand on the tatami. (see figure 10 B)

Itsutsu No Kata（五の形）

Nihon me **Traditional (advanced) form**



gentle form



Uke gets up and steps forward with his right foot to push with his Tegatana (hand to katana fig. 1) at the center of Tori's abdomen.

fig. 1

Tori withdraws with his left foot, turns left to avoid Uke's attack, reaches out and grabs his right hand with Uke's open right hand in a handshake (signal of attack action ended) [Image 3] thus providing him with a support for the fall.

difference between Nihon me in Itsutsu no kata in the traditional (advanced) form and Nihon me in the gentile form

[Image 3]

difference between Nihon me in Itsutsu no kata in the traditional (advanced) form and Nihon me in the gentile form

Tori continues to turn to the left keeping the grip of his mane and gently accompanying Uke in the fall. [Image 4]

[Image 4]

difference between Nihon me in Itsutsu no kata in the traditional (advanced) form and Nihon me in the gentile form

Uke makes the fall rolling first on his right knee then on his back until he hits the mat with his left hand. [Image 5]

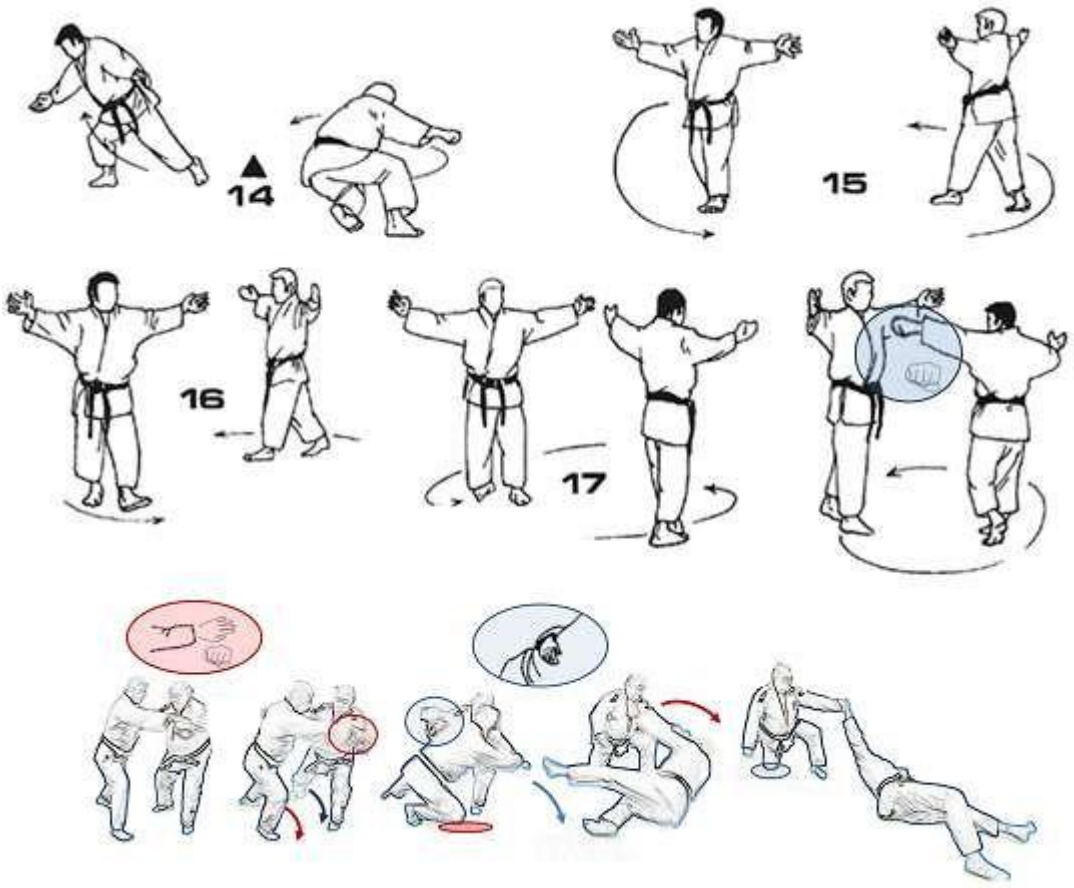
[Image 5]

N.B. On this occasion, Uke's fall starts from a slightly higher position than the previous one performed resting on Tori's right arm in Ippon me and, this time, it is caused by the dragging of Tori (accompaniment) who shakes his hand.

I give this handshake a symbolic meaning; I wanted to put this into it ... it's a Western way to represent ... I'll give you a hand, ... so we help each other ... it's a sign of friendship.

Itsutsu No Kata（五の形）

Sanbon me **Traditional (advanced) form**



(a) **(b)** **(c)**

After finishing Nihon-me, without stopping, Uke gets up.

Tori and Uke assume the positions as two birds extending both wings widely and turning counterclockwise like a vortex to get closer to each other.

When Tori faces Joseki diagonally to the left in the center of the Dojo, both Tori and Uke grab each other by crossing their right arms below, and their arms above , in order to counterbalance each other's strength.

Both Tori and Uke turn sharply counterclockwise with gradual acceleration; when Tori closes his left fist (signal of an attack action ended) and breaks Uke's equilibrium in the front right corner, who finds support on Tori's left wrist with his right hand (a).

(a) **(b)** **(c)**

Difference between Sanbon me in Itsutsu no kata in the traditional (advanced) form and Sanbon me in the gentile form

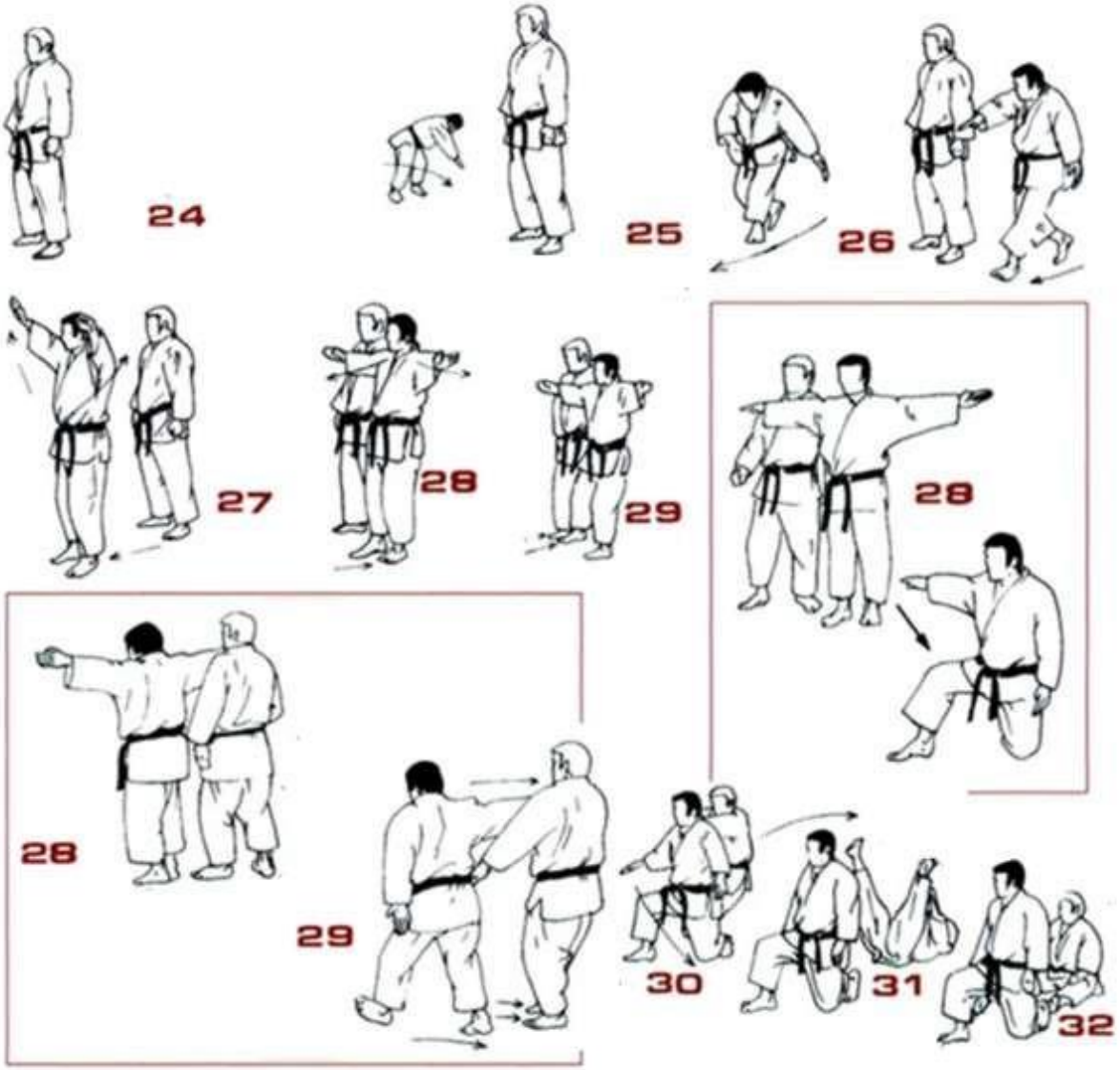
Note above Image from Itsutsu no Kata in the traditional (advanced) form Tori finds support on his right knee and turning to the left (b), with the help of his right hand behind Uke's back (c) , causes him to fall.

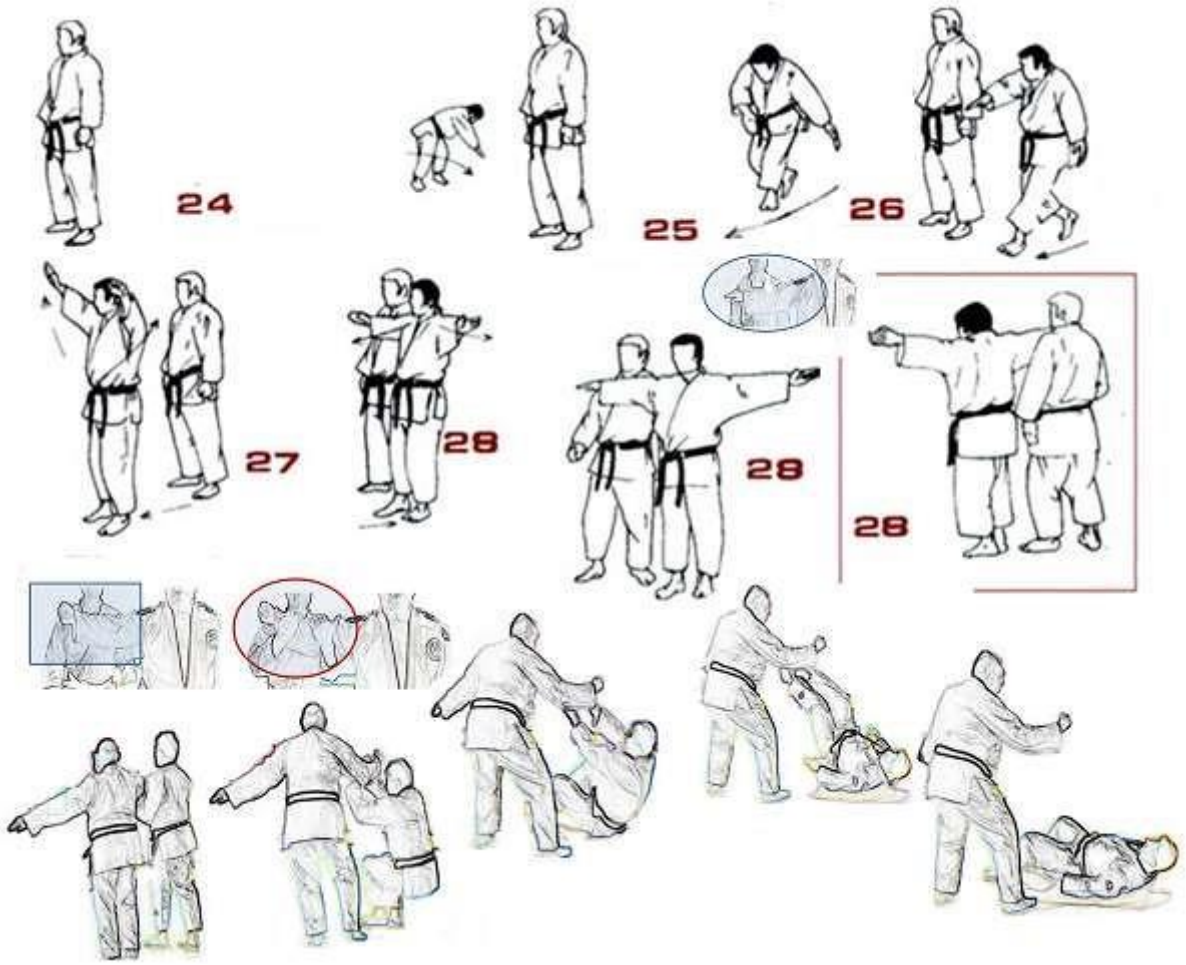
Uke makes the fall rolling on his right knee and then, slowly, on the left side until he hits the Tatami with his left hand.

Yoko Wakare - Different conclusion in the traditional (advanced) form

Itsutsu No Kata（五の形）

Yonhon me **Traditional (advanced) form**





We position ourselves and proceed in a similar way to what was previously described for the canonical form of Yonho me until Tori rests his right elbow on Uke's chest and tries to break Uke's balance backwards by pushing. (28-29). Uke gradually and slowly withdraws.

Image from Itsutsu no kata in the traditional (advanced) form

Once the imbalance is created, Tori turns his right arm clockwise 90 degrees and closes his right hand into a fist (signal of attack action ended). Uke finds support by placing both hands from underneath on Tori's outstretched right arm. [Image 6]

[Image 6]

Image from Itsutsu no kata in the traditional (advanced) form

From this position Uke performs the ushiroUkemi by bending the knees, first placing the buttocks and rolling on them, gently placing himself on his back.

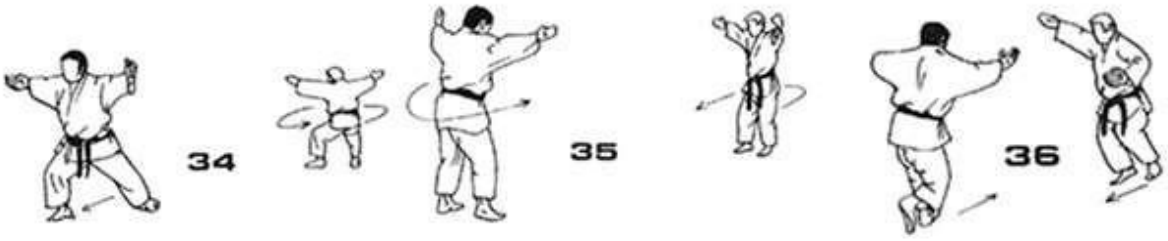
Tori accompanies Uke's fall by keeping his right arm stretched out with his clenched fist and turning towards his right until Uke removes his arms to finish Ushiro Ukemi.

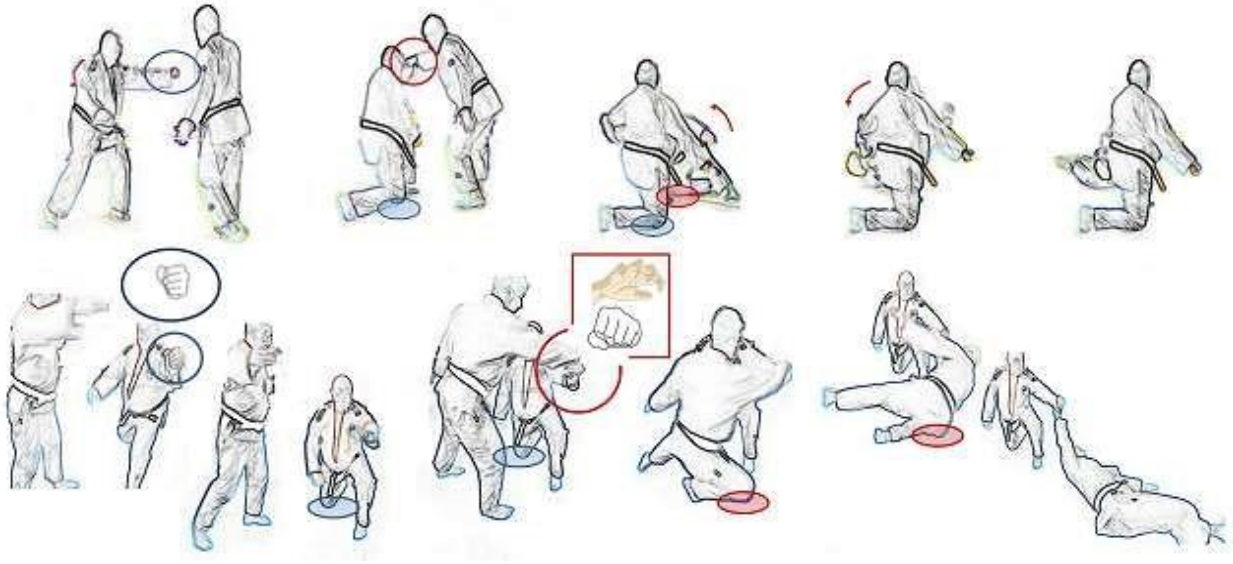
lower left : difference between Yonhon me in Itsutsu no kata in the traditional (advanced) form and Yonhon me in the gentile form

Itsutsu No Kata（五の形）

Gohon me **Traditional (advanced) form**

gentle form





We position ourselves and proceed in a similar way to what was previously described for the canonical form of Gohon me until Tori and Uke turn and, facing each other, advance with gradual acceleration (35-36).

Immediately before they are about to collide with each other, Tori brings his right leg slightly out and finds gentle support on his knee, at the same time, stretching his left arm forward with his closed fist (attack action signal finished). [Image 7]

[Image 7]

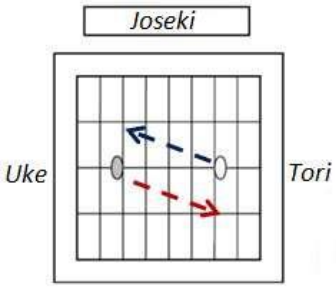
Image from Itsutsu no kata in the traditional (advanced) form

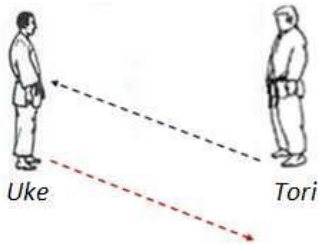
Yoko Wakare - Different conclusion in the traditional (advanced) form

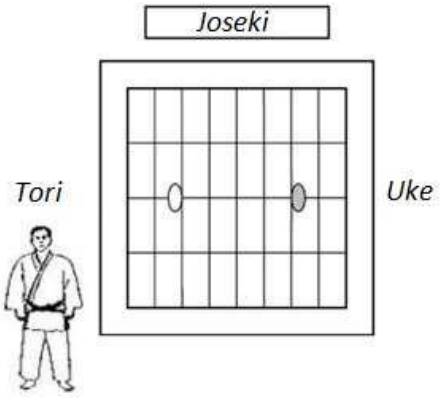
At the end of the Itsutsu no kata two alternatives:

1 - Continue with Genzoku no Genkei Tori returns to the 4 tatami position and turns around

2 - To end the Kata and final salute you have to change places





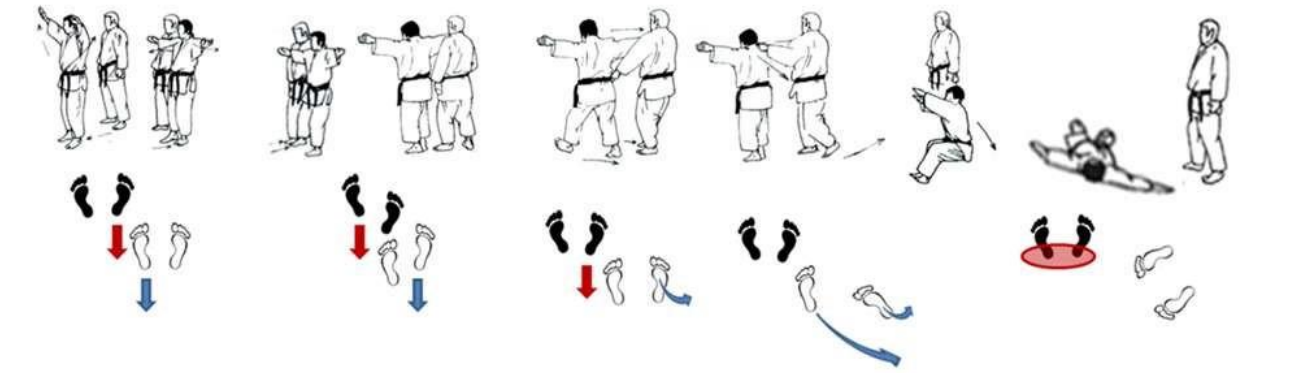


Genzoku no genkei will be presented in the two forms in comparison.

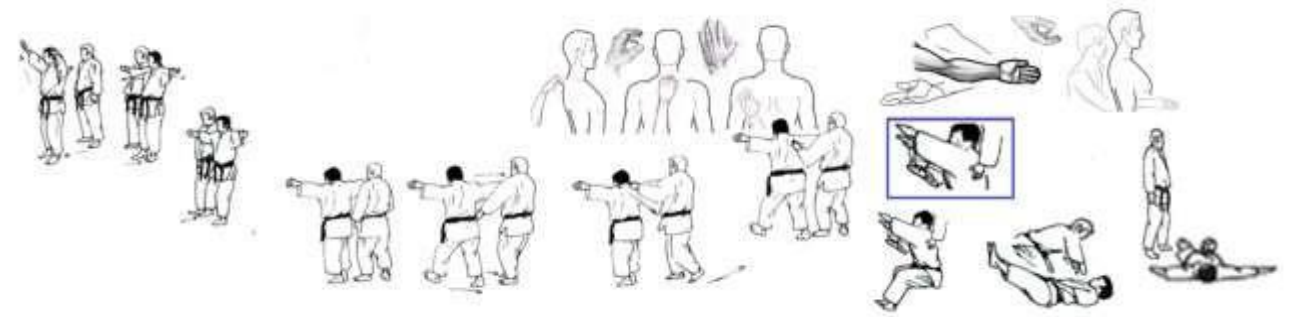
Roppon me

UKE makes the movement of the fourth technique in the wave and coming back, makes contact with his right arm with TORI's chest.

After the first push TORI with his left hand grabs UKE's collar (four fingers inside thumb out) and turning to his right outside, accentuates the pull causing UKE to fall onto his back as he gazes at him.



gentle form



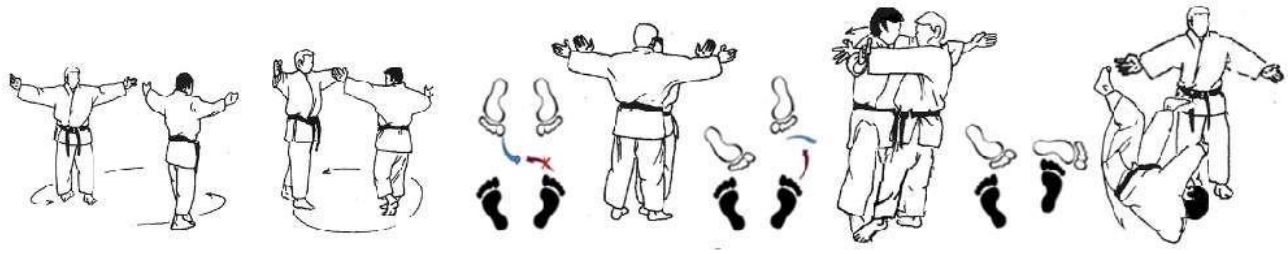
Uke performs the movement of the fourth technique in the wave and coming back, makes contact with his right arm with Tori's chest.

After the first push Tori with his left hand grabs Uke's collar (four fingers inside thumb out) and turning to his left outside, only appears to pull Uke backwards; but, In this case, instead of carrying out the action with violence; Tori assists Uke in a Ushiro Ukemi by supporting Uke's right arm from underneath with his right arm (signal of attack action finished) and keeping with his left hand the grip on Uke's collar without pulling (four fingers inside thumb out) [in alternatively, for greater control, placing his left hand under Uke's left arm]

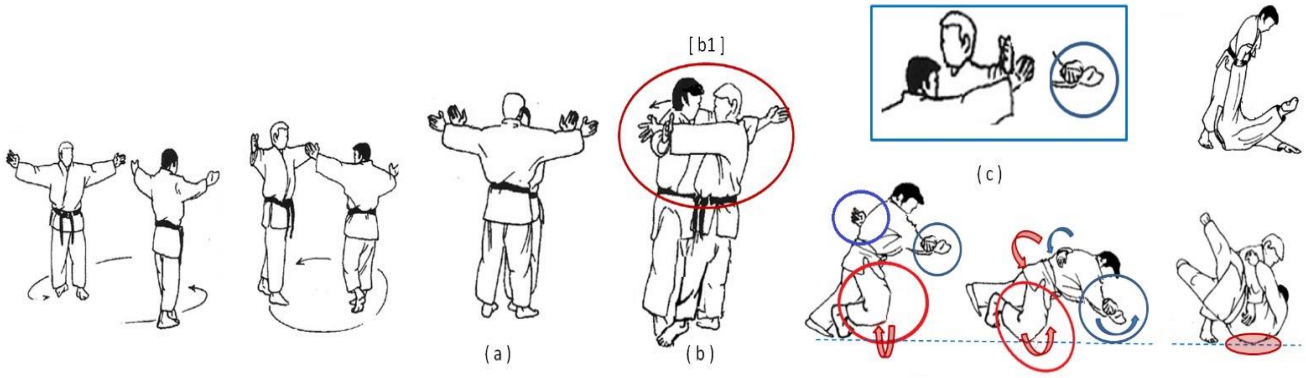
Uke performs Ushiro Ukemi by bending the knees, first placing the buttocks and rolling on them, bringing himself gently on his back; Tori in the dynamics of the action rotates to the right, once in front of Uke he leaves him to allow him to bring Ushiro Ukemi to the conclusion while watching him with his eyes.

Nanahon me

UKE rises and begins the rotational movement of the third technique, TORI also approaches him rotating and, before UKE can launch into yoko wakare, brings his right leg forward; he stretches his left leg and blocks UKE's rotation, throwing it with a rolled tripping.



gentle form



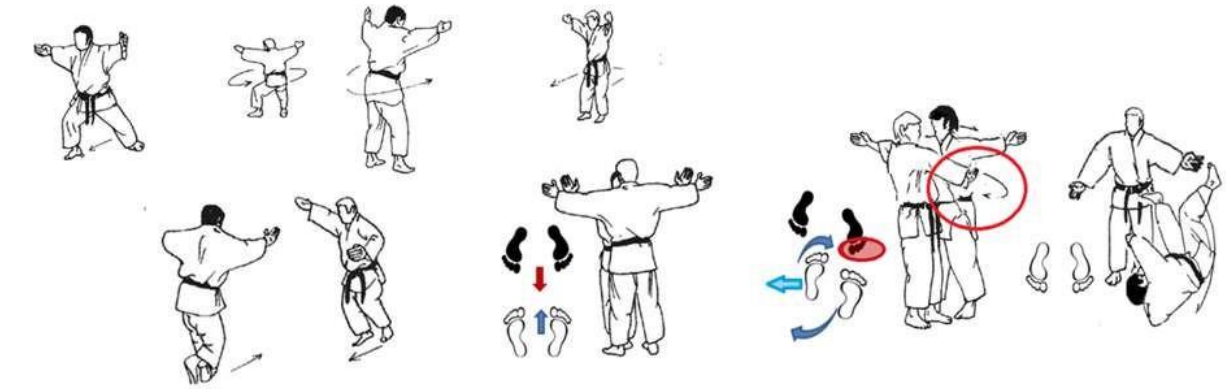
Uke rises and begins the rotational movement of the third technique, Tori also approaches him rotating and, before Uke can launch into yokowakare, Tori with right arm under Uke's left arm and left arm over Uke's right arm [b1]; Uke with right arm under Tori's left arm and left arm over Tori's right arm.

Tori approaches Uke, brings his right leg slightly forward (precisely preventing Uke from acting) [a] and extends his left leg (b) which blocks Uke's rotation, and accompanies him in the fall making the grip with the left hand to the right sleeve of Uke's Judogi (signal of attack action ended) and supporting him with the right arm behind the back from under the left armpit. (c)

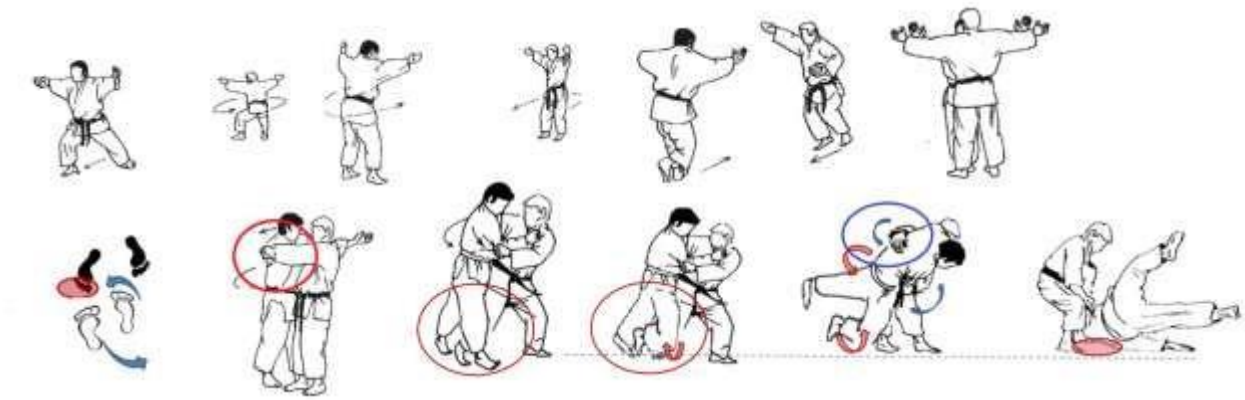
Uke, climbing over Tori's left foot, makes a fall forward by placing his right knee gently on the ground and accompanied in the rotation on the knee on the ground by Tori concludes his rotation to the right on the back and then goes to the left side and hits with the left hand on the tatami.

Happon me

UKE and TORI reach the edge of the area and as in the fifth technique they position themselves and then rotate and launch towards each other, but in this case TORI does not let himself fall but veering slightly towards his left makes sure that the impact with UKE's chest is not full frontal, and shortly before the collision, he stretches his right hand and rotates to his left bringing his right foot behind him, in making this rotation he grabs UKE's back and uses his speed to deflect his force towards the void and helping the consequent rotation of UKE's body throws it to his right. (Like a rotated dance step)



gentle form



Uke and Tori arrive at the edge of the area and as in the fifth technique they position themselves to then rotate and launch towards each other, but in this case Tori does not let himself fall but turning slightly towards his right makes sure that the impact with the Uke the chest is not completely frontal.

Shortly before the collision, (see note for falling) Tori rotates towards his right bringing his left foot behind, while making this rotation he grabs the right sleeve of Uke's Judogi with his left hand (signal of attack action finished) and supporting him also with the right arm behind the back from under the left armpit causes the projection.

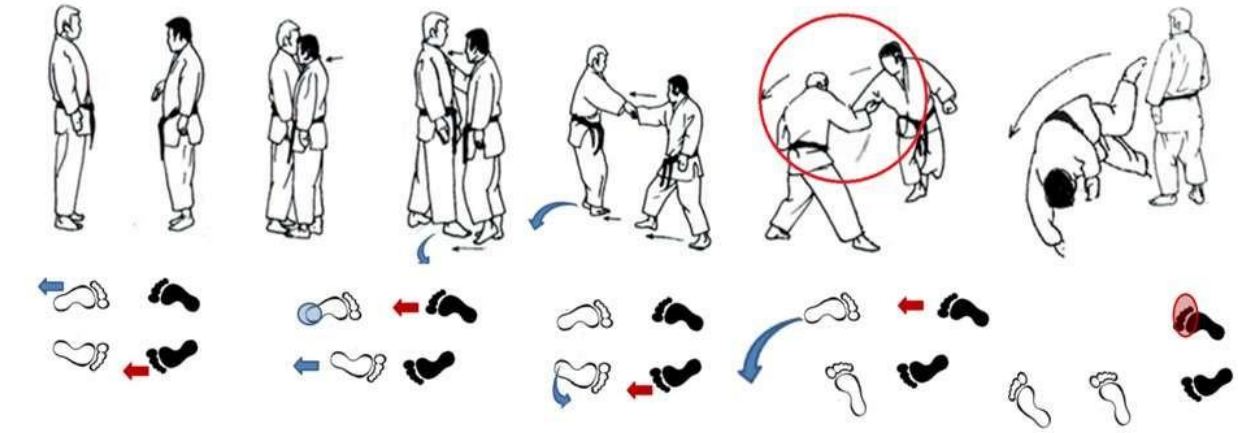
note for falling: If Uke is left leg forward continue from ---> (1)

If Uke is with his right leg forward, continue directly from ---> (2)

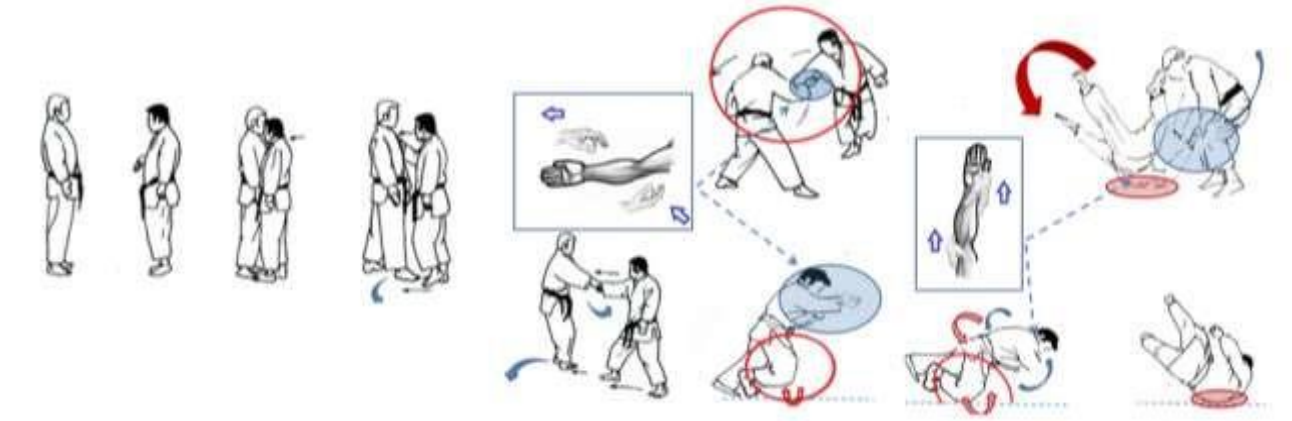
---> (1) Uke stepping over Tori's right foot with his right leg (d) ---> (2) falls forward by placing his right knee gently on the ground and accompanied in the rotation on the knee on the ground by Tori concludes its rotation to the right on the back and then goes to the left side and hits the tatami with the left hand.

Kyuuhon -me

UKE approaches TORI in the center as in the first technique, before he touches him TORI takes two small steps backwards, consequently UKE reaches out his hand to push, TORI immediately rotates to his right going back with his foot left and simultaneously grasps with both hands UKE's extended right arm and throws it as in the second technique while remaining standing.



gentle form



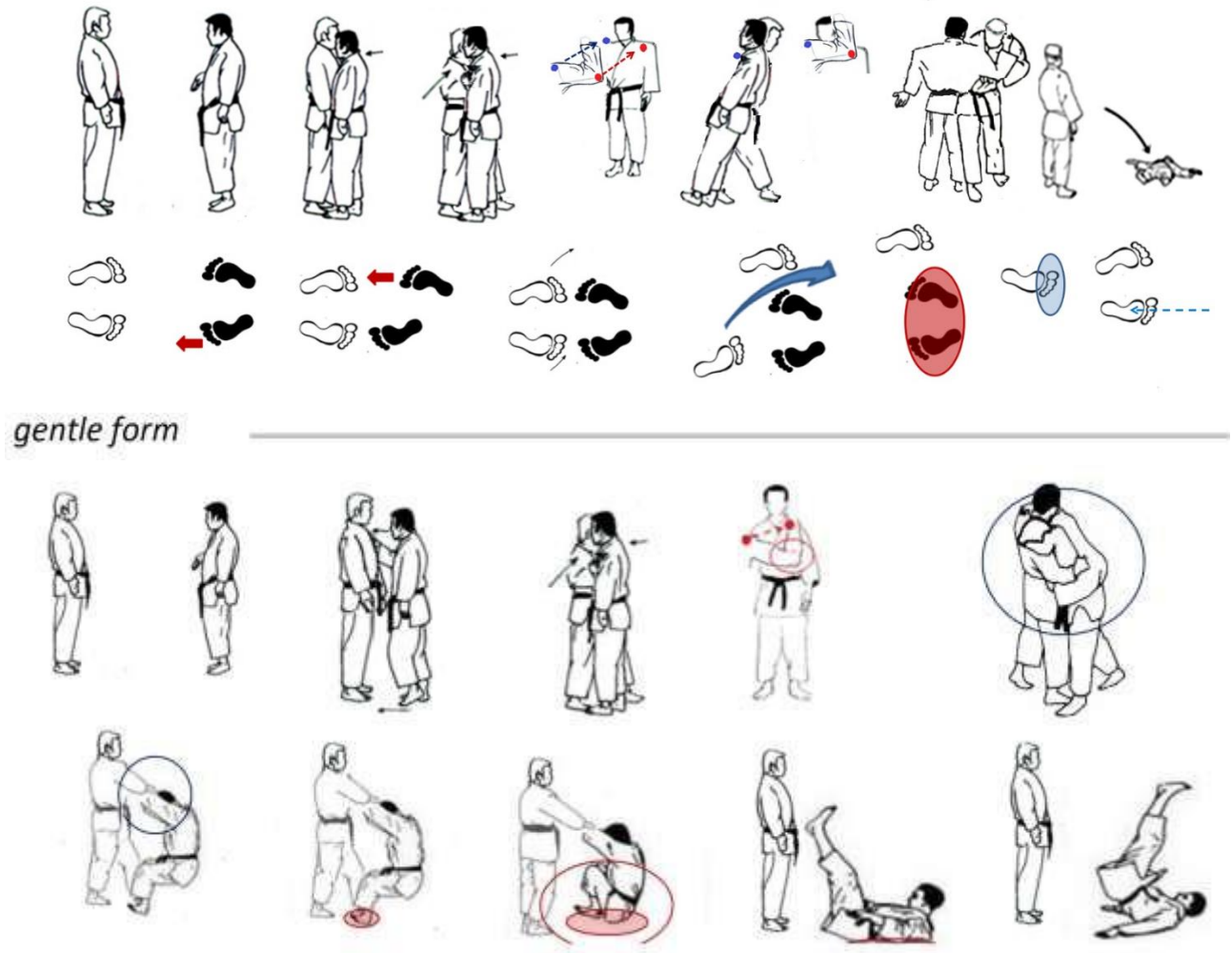
1 2 3 [4]

Tori is positioned in the center and Uke approaches as for ippon me; before Uke touches him, Tori takes two small steps backwards [1 -2 - 3], consequently Uke reaches out his hand to push, Tori immediately rotates to his right going back with his left foot and simultaneously grabs with both hands Uke's extended right arm [4] (signal of an attack action ended) and accompanies him in the fall, guiding the trajectory smoothly.

Uke bringing forward the right foot makes a fall forward placing the right knee gently on the ground and accompanied in the rotation on the knee on the ground by Tori who pulls it to himself ends his rotation to the right on the back and then goes on the left side and hits with left hand on the mat.

Juppon-me

Same action as UKE starting from the opposite side, but this time Uke made aware of the previous action does not reach out, TORI in turn does not back up and as soon as UKE tries to touch him to push as in the first technique, TORI starts in the left side. taking a large step forward with the right leg while simultaneously throwing the right arm forward with the elbow resting at approximately the height of the hollow of the left shoulder of UKE produces the fall of UKE by performing the throw.



Same action as Uke, as for Kyuuhon me but with reversed positions; this time Uke, made aware of the previous action, does not extend his hand; Tori, in turn, does not back away and as soon as Uke tries to touch him to push as in Ippon me (Itsutsu no kata), he starts in sen no sen making a large step forward, this time however with his left leg and doing simultaneously the right socket (attack action signal terminated). The right grip made on Uke and the left leg forward allow Tori to control / guide his fall; alternatively, in case of maximum discomfort or minimum skill, Tori can guide Uke's fall by taking both sleeves of the judogi.

Uke thus reassured performs ushiro Ukemi by bending the knees, first placing the buttocks and rolling on these, bringing him gently on his back.

Tori accompanies Uke's fall by standing in front of him, leaves him alone when Uke gently carries himself on his back and ends Ushiro Ukemi.

Safe Form

Change in the Third and Fifth Gentle Form of Itsutsu No Kata

After finishing Nihon-me, without stopping, Uke gets up.

Tori and Uke assume the positions as two birds extending both wings widely and spinning counterclockwise like a vortex to approach each other.

Both Tori and Uke turn sharply counterclockwise with gradual acceleration; as soon as Tori closes his left fist (signal of an attack action ended) and breaks Uke's balance in the front right corner, Uke finds support on Tori's left wrist with his right hand (a).

Tori continues to turn left and with the help of his right hand behind Uke's back he makes him fall; Uke finds safety from the support on Tori's left arm (b) .

Tori lowers his left arm only when Uke's roll is over(c). Uke makes the fall by rolling on the knee and then, slowly, on the left side until he hits the mat with his left hand. In the next page we show step by step in deep the correct execution of this variant.

Sanbon-me - Safe Form

	Tori	*Uke*
1 Start of *Sanbon me* Safe form	After finishing *Nihon-me*, *tori* extends both arms to shoulder height, as if a bird extending its wings, and begins to move in a counterclockwise vortex with the goal of meeting *uke* at the vortex's center 	After finishing *Nihon-me*, without stopping, *uke* begins to raise *uke*'s arms to shoulder height, as if a bird extending its wings, while standing up, then *uke* moves counterclockwise to meet *tori* at the vortex's center
2 	*Tori* and *uke* are about to collide at the center of the vortex. Note that *tori*'s left hand (barely noticeable) is lower than *uke*'s right hand. This puts *tori*'s right hand in position for *uke* to grab and hold that hand for support during *uke*'s *ukemi*.	
3	*Tori*'s right-hand cups *uke*'s left serratus anterior, then pushes into the serratus anterior—or against the midaxillary line directly under *uke*'s left armpit to as far back as the posterior axillary line—to off-balance *uke* to *uke*'s right As soon as *uke* is off-balanced, *tori* folds *tori*'s fingers inwards to form a fist (to signal *uke* that *tori*'s attack is complete). [This action is not visible in the picture]	It may be difficult to see; however, *uke*'s left foot is off the tatami with *uke* in an off-balanced position
Almost verbatim reminder from page 44: the Rule of "No Rules" means that, in its linear execution, each performer will be able to have his own pace of locomotion, his own speed of execution of movements, and his form of facilitated fall.		

	Tori	*Uke*
4		As soon as *tori* makes the closed-fist gesture, *uke* grabs *tori*'s left wrist with *uke*'s right hand and uses *tori*'s arm as support during *uke*'s **facilitated *ukemi***. [This action is not visible in the picture] *Uke* has initiated *uke*'s left side *ukemi*
5 *Uke*'s *ukemi*	 Note that during *uke*'s *ukemi* that *tori* remained standing; NOT kneeling	
6 	*Tori* has rotated to look squarely at *uke*	*Uke* has assumed a sitting with *uke*'s legs stretched out
7 End of *Sanbon me* Safe Form		
8 	*Tori* has assumed the *shizen hontai* posture in preparation for the *Yonhon-me*	*Uke* has completed a 180° *tai-sabaki* (rotating to *uke*'s right) and is now facing *tori* in preparation for the *Yonhon-me*

Itsutsu No Kata（五の形）

Gohon me Safe form

We position ourselves and proceed in a similar way to what was previously described for the canonical form of Gohon me until Tori and Uke turn and, facing each other, advance with gradual acceleration (35-36).

Before they are about to collide with each other, Tori rotates to the right; Uke follows Tori in the rotation to stay in front of him until he reaches the reverse position; Tori brings both arms forward as if to push Uke into the void with his hands clenched in fists (signal of an attack action ended).

Uke finds support with his hands on Tori's wrists and, supported by him, gently performs a ushiro Ukemi by bending his knees, first resting his buttocks and rolling on them, bringing himself gently onto his back; Tori in the dynamics of the action remains in front of Uke and leaves him only to make him finish ushiro Ukemi.

Gohon-me - Safe Form

	Tori	*Uke*
1 Start of *Gohon me* Safe form 	After finishing *Yonhon-me*, *tori* extends both arms to shoulder height, as if *tori* was a bird extending its wings, and rotates counterclockwise to face *uke*.	After finishing *Yonhon-me*, *uke* extends both arms to shoulder height, as if *uke* was a bird extending its wings, *uke* rotates counterclockwise to face *tori* at the far position
2 	As soon as *tori* is faces *uke*, *tori* walks towards *uke* and just as they are about to meet, *tori* stops Note: *tori*'s pace is whatever pace *tori* finds comfortable and safe	Once uke is facing *tori*, *uke* walks towards *tori* and just as they are about to meet, *uke* stops Note: *uke*'s pace is whatever pace *uke* finds comfortable and safe
3 	*Tori* and *uke* have now stopped at the center of the exercise area and *tori* has both of *tori*'s hands (left and right) lower than *uke*'s hands.	
4 	*Tori* rotates counterclockwise and after approximately 90°of rotation, *tori* lowers both hands to rest on *uke*'s stomach about 2 inches above *uke*'s belt line. Note: Although *tori*'s hands may be clinched into fists *tori* has not finished *tori*'s preparation action.	*Uke* has also rotated 90° counterclockwise; however, *uke*'s arms are still extended outwards to the *uke*'s side. Note: *Uke* needs to wait until *tori* has rotated another 90° before lowering *uke*'s arms and grabbing *tori*'s hands, wrists, or arms.
5 	*Tori* rotates an additional 90° and pauses to allow *uke* to lower *uke*'s arms and grab *tori*'s left and right hand, wrist, or arm.	*Uke* lowers his arms and grabs *tori*'s hands, wrists, or arms to establish a base of support for *uke*'s *ukemi*.

Examples of technical solutions:

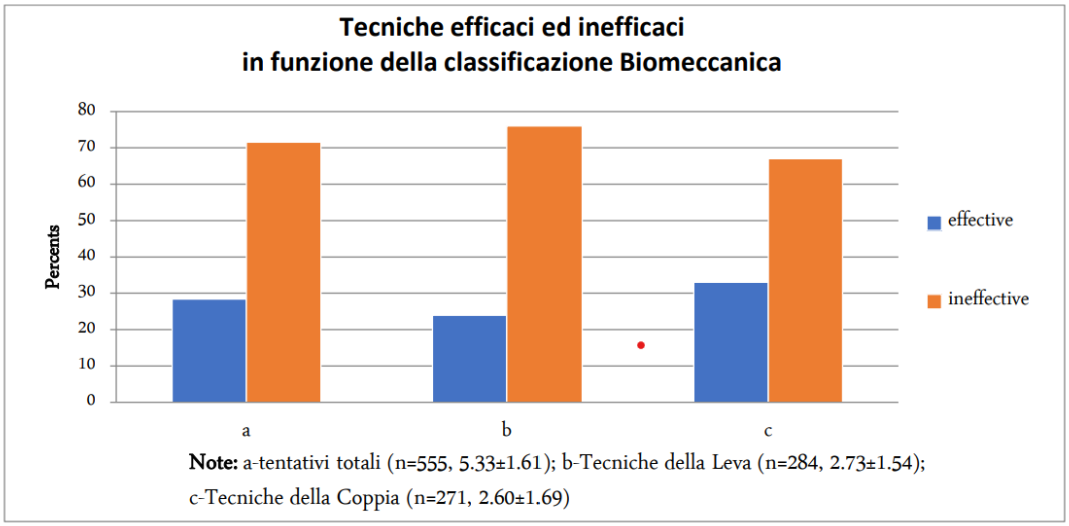
Classic, Innovative or Chaotic

to actions or movements performed in Gensoku No Genkei (原則 の 原型)

The examples that will be presented below are taken from personal works that reflect the technical situation shown in a simple way in Gensoku No Genkei and have been chosen only as an example of solution to certain situations. Since, the preferred techniques during the fight depend on the gender and weight category of the judoka, the relationships found in this study, which are justified by the biomechanics of the throws, should be taken into account in the technical and tactical training of the competitors.
The method used in this study can be used for future research on coaching trends. Table 1 shows the percentage effectiveness of projection techniques at the London Olympics broken down by gender and according to biomechanics.

Efficacia dei Lanci alle Olimpiadi di Londra 2012		
Lanci	**Maschi Efficacia%**	**Femmine Efficacia%**
Seoi (Ippon - Morote - Eri)	**14,8 (329)**	**8,2 (222)**
Uchi Mata	**9.2 (138)**	**15 (143)**
O Uchi Gari	**15 (53)**	**24 (49)**
Ko Uchi Gari	**12 (57)**	**37 (35)**
Tai Otoshi	**25 (36)**	**23,8 (21)**
Soto Makikomi	**10 (10)**	**23,6 (17)**
Tani Otoshi	**46 (13)**	**50 (16)**
Uchi Mata sukashi	**90 (10)**	**100 (10)**
Coppia	**28.7**	**39**
Leva	**24**	**26.4**

Effectiveness of throwing techniques London 2012



Effectiveness of Throwing Groups Uzbekistan 2019

1st 2nd 4th technique of Itsutsu and 6th 9th of Gensoku

Examples of Straight Lever Attacks

Linear GAI Lever Attack: Classic Hiza Guruma, Tokyo World Championship 2019 and Hook Foot Tokyo World Championship 2019, Cadet World Championship Almaty 2019, Quingdao Masters 2019.

Two-footed Tomoe Nage Qingdao Masters 2019, 2019

Yoko Tomoe Nage World Championship Tokyo

The straight closure of the distance between TORI and UKE can also occur in a simultaneous direct attack, and the use of a Ura Nage

Idaki Sutemi (recorded as Ura Nage) World Championship Baku 2018

Examples of Straight Couple Attacks

Attacks with Linear Gal, World Junior Championship 2019

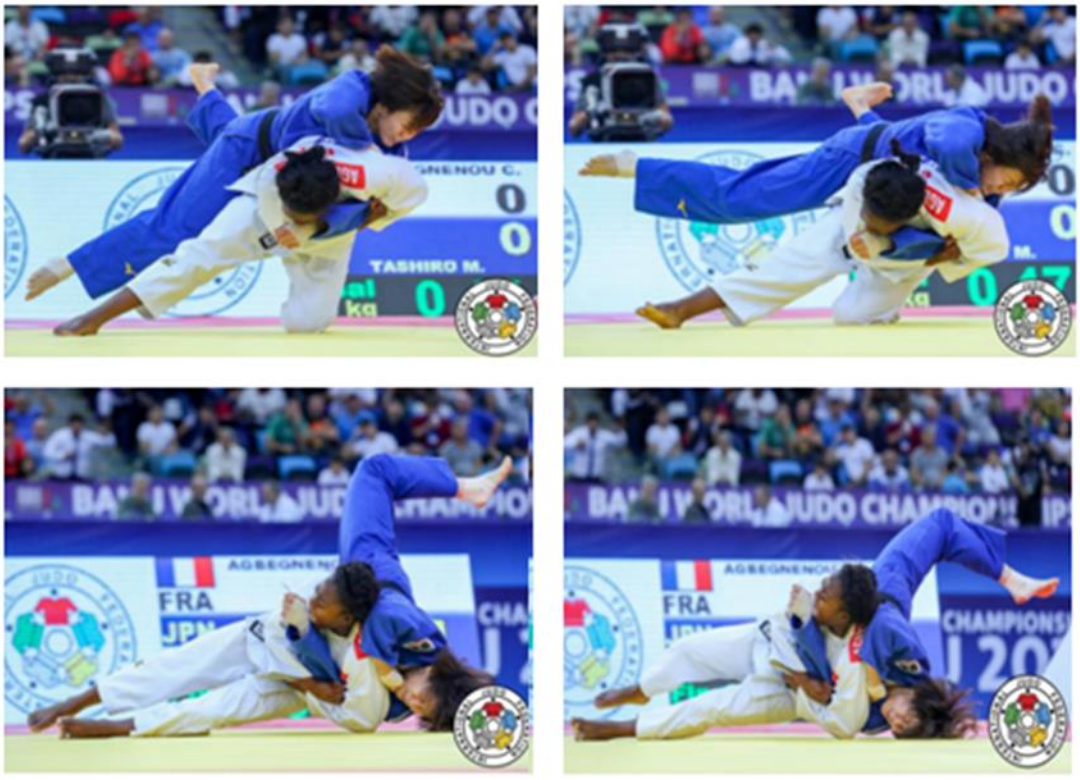
left O Uchi Gari right O Uchi Gari

Modern interpretations of O Uchi Gari from central attack World Junior Championship 2019

3rd 5th technique of Itsutsu and 7th 8th of Gensoku

Examples of Rotational Lever Attacks

Hiza Guruma (straight GAI) rotational variant



Soto Makikomi's Modern Attack, Baku World Championship 2018

Yoko Otoshi made more effective by a subsequent non-blocking leg push, Tokyo World Championship 2019

Examples of Rotational Couple Attacks

O Soto Gari Lateralized with rotational application Grand Slam Tashkent 2021

Uchi Mata's interesting entry action on a low defensive position resolved with a wide external rotation in the horizontal plane parallel to the mat, Tokyo 2019 World Championship

10th of Gensoku

Sen No Sen

Sen No Sen, O Soto Gari lateralized, with increased effectiveness through an action by Makikomi, O Soto Makikomi Grand Prix Antalya 2019

Itsutsu Other Interpretations

The previous examples of techniques, which can be applied as possible continuations to Gensoku no Genkei, are based on the biomechanical principles inherent in it.

These principles that we briefly recall are:

1) The archetypes of the principle of forces
2) The use of, both in an active sense (Itsutsu) and as exploitation, the strength of UKE (techniques 6 – 10; the Gensoku)
3) The simplest and most natural techniques possible that are not techniques officially recognized and coded by the International Judo Federation.
4) Movements belonging only to lever group
5) With the exception of grips during ukemi, no Kumi Kata
6) Only rotational (Tai Sabaki) and / or translational movements
7) Sen No Sen
8) Tori always standing (only for Gensoku)

In Itsutsu, for obvious reasons, different types of judo techniques have been associated according to the interpretation associated with the movements performed. For the sake of completeness, we report an example taken from some brief comments by my late friend M ° Guy Pelletier 9 Dan (1921-2011): on the spirit of kata and specifically on Itsutsu no Kata
A good Kata is more than just a number of physically correct actions. It is the mental attitude of the two partners who realize the kiai, as a unity of the spirit. Here lies the essence of Kata. The flow of mental energy is very evident when we witness a demonstration of quality. UKE as TORI must show their "ki", or mental energy. Their external attitude is one of calm, quiet vigilance and self-confidence. Your "ki" and that of your partner come together and rely on kiai, which in turn induces a state of mind called *Muga-mushin.* However, this is not achieved until after much experience and practice. *Muga-mushin* means "no self, no mind". It is a state of indifference that frees the conscience of the actions taken. In this state, the spirit solves problems automatically, so to speak, hence its importance in self defense and judo. Kata is the best way for a judoka to do judo in a state of ignorance of the specific actions he is doing. A judoka is an expert when he reaches this stage. Kata refines the spirit, allowing it to perform actions faster than through itself, in this way art becomes an "***art without art***".

With regard only to Itsutsu No Kata, the movements can be interpreted as follows:

1st element: **Earth**

It is the principle of concentration of energy and action, it dominates the direct force of TORI, UKE bringing it to imbalance. A force can control a larger one easily by making a continuous and logical attack

Uchi Mata, Seoi Nage, Harai Goshi

On the first technique, TORI and UKE come together, TORI pushes UKE to such a point that he cannot stand.

2nd element: **Fire**

This is the principle of reaction power and minimal direct resistance. Evasion and Maximum Utilization of UKE Force Control of a force through the use of this force.

Utsuri Goshi, or Soto Gaeshi

The second technique is very similar to Uki Otoshi. TORI pulls UKE in the direction of UKE's move.

3rd element: **Wind**

This is the principle of centrifugal and centripetal forces. If you are being pulled into a circle by someone stronger than you, it is possible to throw it by taking control of the center of the circle. The cyclical movements illustrate the wind.

Hiza Guruama, Ashi Guruma, Te Waza

In the third technique, TORI and UKE move together in a circle.TORI and UKE join and TORI launches UKE with Yoko Wakare.

4th element: **Water**

It is the principle of alternation like that of the ebb and flow of the tides. Rhythmic and alternating movements are important in this series. It's about using opportunity. It is necessary to accelerate the demonstration of the techniques, which occurs by succession of attacks.

Ko Uchi Gari, Tai Otoshi, Uchi Mata

The fourth technique represents the movement of the tide. The ending may be reminiscent of a very conventional form of Tani Otoshi.

5th element: **Void**

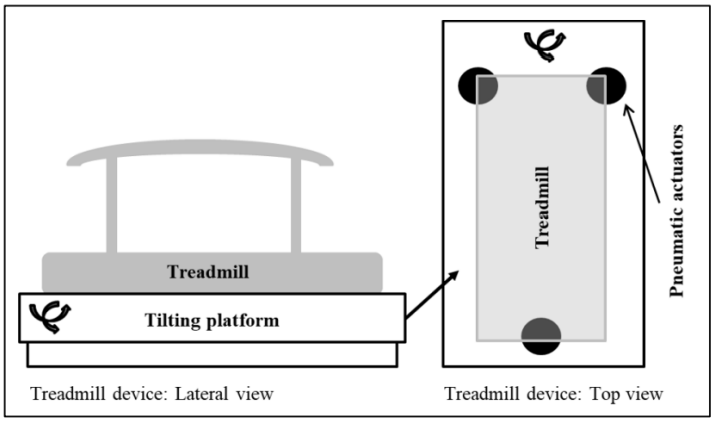
This is the principle of vacuum or inertia. Adaptations where all opportunities can be exploited with an adequate technique.

All Sutemi, Uchi Mata Gaeshi

On the last technique, TORI and UKE come together and TORI launches a technique like Yoko Wakare

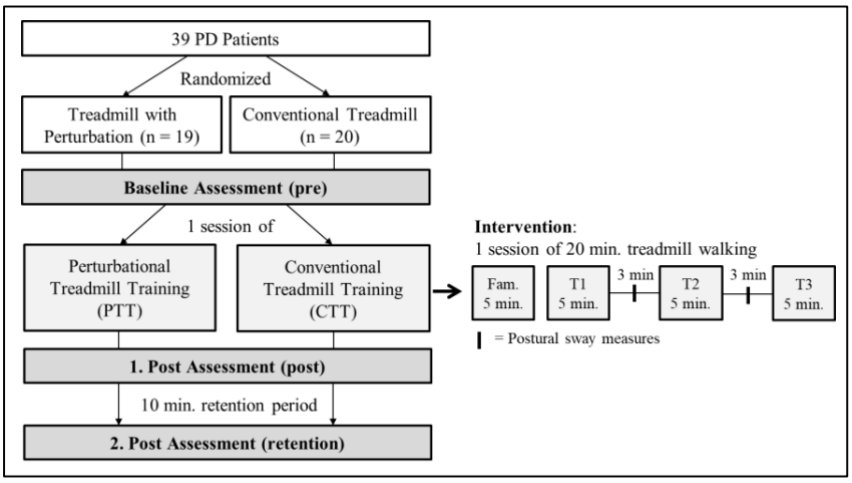
Gensoku no Genkei potential therapeutic tool for Parkinson's?

Impairments in motor control, associated with Parkinson, result in diminished functional abilities. Physical interventions aimed at limiting this functional decline are an important part of the therapeutic program for the patient with Parkinson.
The overall rehabilitative goal is to maximize the patient's functional independence and thus, if possible, enhance quality of life at all stages of the disease.
The design of a rehabilitation program for a patient is normally best done by a physician skilled in neurorehabilitation in team with other professionals, such as a physical therapist, occupational therapist, speech therapist, and recreational therapist.
For example, postural alterations to postural hypotension can result in impaired balance and increased risk of falls. Balance exercises normally are introduced from an early disease stage to become part of the daily habit of Yoga exercise. Higher level balance training, such as that provided by tai chi, are also more often recommended.
Patients are more likely to fall when stooping to retrieve objects. For all persons at risk of falling, especially during the first time of Parkinson it is important that they receive instruction in two areas: 1) how to fall safely and 2) how to safely get up off the floor after a fall.
In 2015, a new method in Parkinson therapies was researched at the Institute of Sport Science and Sport in Erlangen, Germany. The new method used a treadmill with a tilting platform (see the following figure)



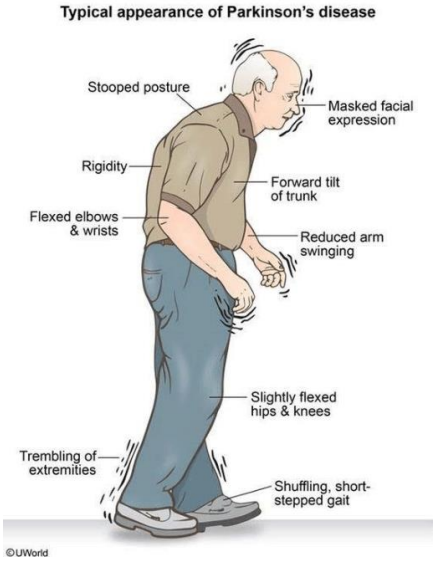
Tilting treadmill from [32]

The study followed the protocol outlined in the figure below:



Protocol of the tilting treadmill experiment from [32]

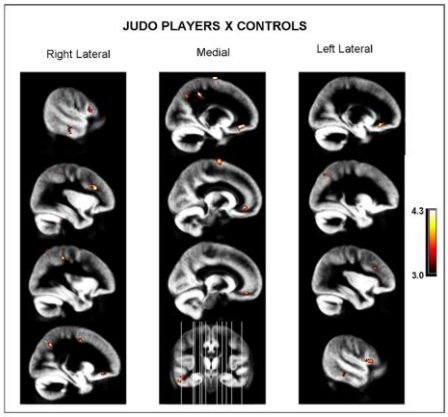
The experiment's results were encouraging. The experimental group significantly improved in overground walking speed after intervention, compared to the control group, however, one session of perturbational treadmill training only led to beneficial acute adaptations in gait performance but not in postural control.
Falls are a well-known major problem for elderly and elderly with Parkinson. In the next figure there is a miscellanea of typical appearance of an advanced Parkinson disease



One goal of the EDJCO Project is teaching elderlies how to safely fall. That goal can be reached by using the gentle and safe forms of the Gensoku no Genkei that are shown in the previous chapters.
Exercise may be neuroprotective in Parkinson Desease.
There is evidence indicating benefits of exercise programs in gait/balance, specifically strength and balance training, in reducing falls among community-dwelling older people.
Rhythmic visual or auditory clues and mental singing during walking may also improve gait in these patients.
In some recent studies randomized controlled trials have shown fall reduction with Tai Chi, and exercise programs for muscle strengthening and movement strategies .
Physical therapy can be helpful in fall prevention, but benefit can be limited and short-lasting.
Dosage, training intensity and duration may also affect results.
For exempla a recent randomized trial of home program with strength and movement strategy training and falls education did not prevent falls .
Dance therapy has been observed to be beneficial and may have longer lasting effects . In particular, tango training improved mobility and other motor domains.
In all therapeutic intervention studies, one should be cautious in applying the results to practice. Regular exercise, physiotherapy and dance are helpful in mobility, but the right dosage and type of exercise should be individualized.
Future studies should also focus on therapy content, repetitions and effective duration, in order to optimize outcomes and cost-effectiveness for Parkinson desease patients to further guide
Obviously, the ukemi methods can be extended to help the elderly with Parkinson.
The figures below demonstrate a strategy for "How to get up alone from the floor."

❶ From a lying position, turn onto your side.
❷ Lean on the elbow of the side you're laying upon; take your other arm and push to lift the upper body.
❸ Get on your hands and knees so that your body is on all fours.
❹ With your hands still on the floor, bring one leg up to make a 90-degree angle. Keep your foot flat.
❺ With fingertips touching the floor, lift your other leg.
❻ Stand up. The important thing is to move slowly and keep your hands on the floor the entire time.

Very general and important tips on how to recover from a fall are: Do not try to get up right away. Before attempting to get up, mentally note whether any areas feel injured. If you suspect an injury, seek medical attention. Attempt to relax for a moment before attempting to get up and if you feel you are able to do so, please apply the strategy shown in the previous figure (sequence).
Although the EDJCO research Project is tailored for judo; both towards balance and falling techniques, the Gensoku no Genkei can be used to help the elderly rebuild their functional independence while enhancing their quality of life. Another study, performed in Japan focalized only on judo falls had interesting successes and results. In our tests one performing subject in the execution is affected by Parkinson's disease.
At light of the improvement seen in performance, while considering the not indifferent psychological component, generated by the meeting for official films in the presence of various Judo masters at the Olympic Center of the Italian Judo federation FIJLKAM; an original line of research emerges spontaneously downstream of question.
Can an appropriate dosage of Gensoku no Genkei, which is based on the simplest movements and falling techniques, act as neurorehabilitation motor stimulation, to slow down or even stabilize, the motor worsening due to Parkinson's?
This could be! Because we know that there are relationship between neural circuitry and biomechanical action . Specifically for judo a recent study show important connection as we see in the next figure



Grey Mass in brain of Judokas from [36]

The largest-ever clinical study of Parkinson's, suggest that people with Parkinson do at least 2.5 hours of exercise every week for a better quality of life. Many approaches work well to help maintain and improve mobility, flexibility, and balance and to ease non-movement Parkinson symptoms such as depression and constipation.
The most important thing is to exercise regularly. To help manage the symptoms of Parkinson, the exercise program must include a few key ingredients: aerobic activity, strengthening exercises and stretching.
There are many types of exercises you can do to incorporate all three elements, including for example: Running and walking, biking, Tai chi, yoga, Pilates or dance, weight training, non-contact boxing, etc.
Because Gensoku No Genkei, although made by basic simple movements, represents in its development a rhythmic and more complex situation also for the presence of companion, than for example Tai Chi or other applications performed alone.
Another interesting notation is that Gensoku no Genkei is executed in **suri ashi**; a walking movement. Suri-ashi is a walking style that involves shuffling over the ground; the act of walking without lifting the feet, but by sliding the bottom of the feet across the floor.
Senior citizens, who have difficulty raising their feet because of aging shuffle their feet, and patients with Parkinson's disease who also shuffle their feet can benefit from balance training in **suri ashi** execution.
Another advantage of Gensoku comes from judo itself, the use of barefoot that stimulates the proprioceptive mechanisms of foot.
To learn how the proprioceptive mechanisms work, it is necessary to "listen" to what is transmitted, sensorially, by the foot, which is the region of our body capable of providing the greatest number of proprioceptive information, deriving from the receptors located in the anterior of the heel, under the head of the metatarsals, under the big toe and in the lumbrical muscles of the foot.
The foot is a complex system in balance; its arched structure gives the system itself a continuous state of "alarm" that can be perceived by paying attention to what the supporting foot transmits, when one assumes the erect position, with a raised and bent limb.
You can thus feel continuous changes in pressure, in different points of the sole of the foot, accompanied by oscillations of the limb in support and by the rest of the body.
These oscillations are determined, unconsciously, by muscle contraction and relaxation, which set the body masses in motion, so that the projection of the body's center of gravity always falls within the shadow of the sole of the foot itself.
In the figure below, showing exercises for Parkinson rehabilitation, it is easy to see that there are similarities to the movements performed during both the gentle and safe application of Gensoku no Genkei.
Obviously for Parkinson affected patients, it is recommendable to train on both sides of the body therefore performing Gensoku No Genkei as Tori and Uke ensures that both the right and left side of the body are exercised.

On this basis, the question becomes can “The Gensoku No Genkei could, perhaps more effectively stimulate the neuronal plasticity of the brain of subjects affected by Parkinson’s disease, contributing to a possible slowdown of their motor worsening?” .

Obviously only further tests conducted under accepted scientific principles and controlled experimentation may provide a more definitive answer to the question.

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